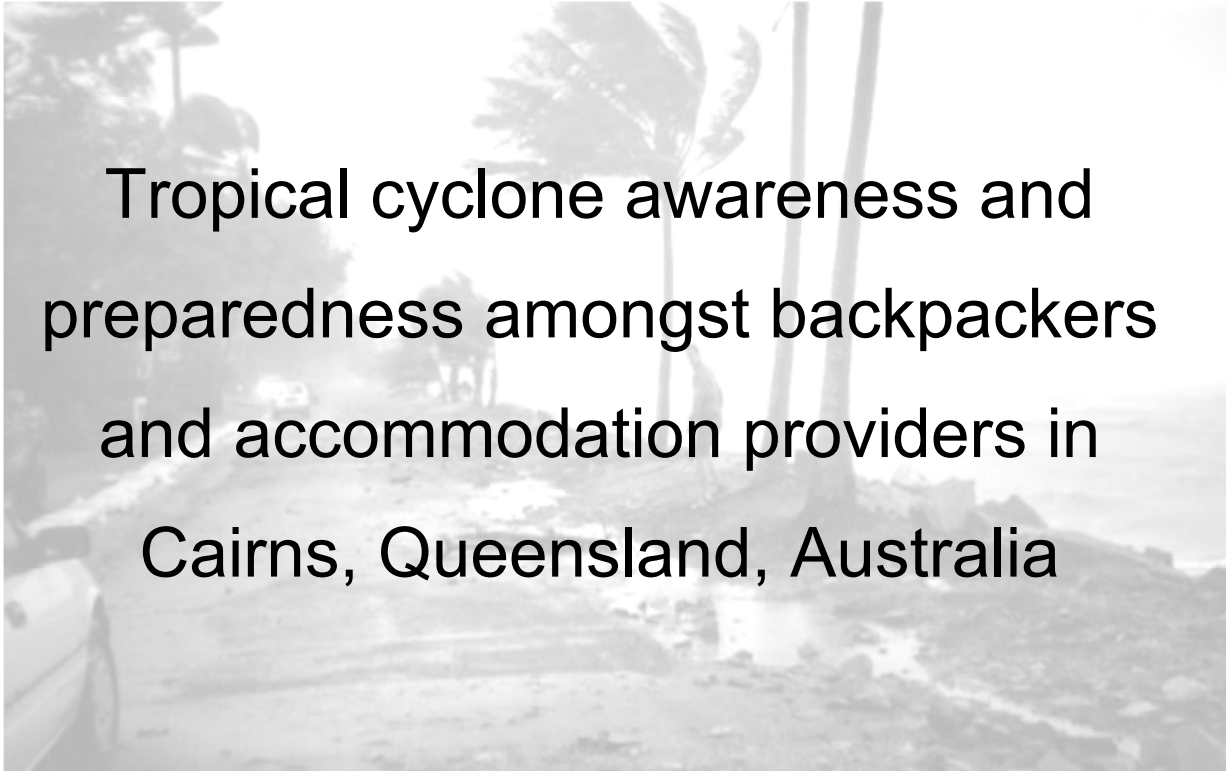




James Cook University



Centre for Disaster Studies

A grayscale photograph showing the aftermath of a tropical cyclone. Palm trees are leaning, and there is significant debris and flooding on a road. The image is faded and serves as a background for the title text.

Tropical cyclone awareness and preparedness amongst backpackers and accommodation providers in Cairns, Queensland, Australia

Principal Investigators for the JCU Centre for Disaster Studies (CDS):
Wouter Hoogenraad
Ronald van Eden

Supervisors: Linda Anderson-Berry & David King – CDS
Edited by David King
Advisor: Scott Cunliffe - CDS

Cairns, Australia, June 2003

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This report is a follow-up investigation, based on the first report prepared in 2001 by CDS

TABLE OF CONTENTS

	Page
List of tables	
List of figures	
Acknowledgements	
Executive summary	
Abstract	
1. Introduction	5
2. Literature review and background to study	6
3. Methodology	11
3.1 Survey design & technique	11
3.2 Questionnaire composition	11
3.2.1 Backpackers	11
3.2.2 Accommodation providers	12
3.3 Sample population selection	12
3.4 Data analysis	12
3.5 Study area	13
3.6 Constraints of the study	14
4. Results	15
4.1 Backpackers	15
4.1.1 Backpacker characteristics	15
4.1.2 Style of travelling	20
4.1.3 Sources of information	27
4.1.4 General knowledge and awareness of cyclones	32
4.1.5 Attitude and concern about cyclones	43
4.1.6 Use of Internet	49
4.2 Accommodation providers	53
4.2.1 Accommodation provider characteristics	53
4.2.2 Concern about cyclones	54
4.2.3 Cyclone information provided by accommodation providers	56
4.2.4 Preparedness of accommodation providers for cyclones	57
5. Current information about cyclones	59
5.1. Lonely planet	59
5.2. Brochures & magazines	59
5.3. Cairns Airport	60
6. Discussion	61
6.1 Backpackers	61
6.2 Accommodation providers	65
7. Conclusion	67
8. Recommendations	69
9. References	71
10. Appendices	73
Appendix 1: Questionnaire Backpackers	
Appendix 2: Questionnaire Accommodation providers	
Appendix 3: Approval Letter	

List of Tables

	Page
Table 1. Gender	15
Table 2. Age	16
Table 3. Origin of backpackers	17
Table 4. Educational level	18
Table 5. Level of competency for written and spoken English	19
Table 6. Main purpose of trip to Australia	20
Table 7. Main transport use	21
Table 8. Size of travel group	22
Table 9. Length of stay in Australia	23
Table 10. Length of stay in Cairns	24
Table 11. Destination after Cairns	25
Table 12. Member of YHA	26
Table 13. Searched information about Australia before trip	27
Table 14. Kind of information searched for	28
Table 15. Sources of information before trip	29
Table 16. Sources of information during trip	30
Table 17. Guidebook used	31
Table 18. Awareness of cyclones in Australia	32
Table 19. Knowledge about cyclone-affected areas	32
Table 20. Information about cyclones before trip started	33
Table 21. Found information about cyclones during trip	34
Table 22. Source of information about cyclones	34
Table 23. How useful was the information?	35
Table 24. Was the information enough?	36
Table 25. Searched for more information about cyclones	36
Table 26. Source of up to date cyclone information	38
Table 27. Cyclone safety information at accommodation	39
Table 28. Cyclone season	40
Table 29. More destructive cyclone	41
Table 30. Description of a storm surge	42
Table 31. Influence of cyclone preparedness on choice of accommodation	43
Table 32. Planned trip with cyclone season in mind	44
Table 33. What to do in case of a cyclone	45
Table 34. Threat of cyclones	46
Table 35. Lived in a cyclone prone area	47
Table 36. Travelled in a cyclone prone area	48
Table 37. Internet use during trip	49
Table 38. Time spent on the Internet in a week	49
Table 39. Place of use of the Internet	50
Table 40. What backpackers use the Internet for	51
Table 41. Visited tourism websites	52
Table 42. Number of Beds	53
Table 43. Occupancy rate	53
Table 44. Damage at facility	54
Table 45. Property damage	54
Table 46. Personal safety	55
Table 47. Financial risk	55
Table 48. Worse reputation	55
Table 49. Cyclone information available	56
Table 50. Languages of cyclone information	56
Table 51. Most useful cyclone information for visitors	57
Table 52. Where the management gets their cyclone information	57
Table 53. Does the facility have an emergency safety plan?	57
Table 54. What kind of an emergency plan is available at the facility	58
Table 55. Willing to have cyclone information at facility	58

List of Figures

	Page
Figure 1. Gender	15
Figure 2. Age	16
Figure 3. Origin of backpackers	17
Figure 4. Educational level	18
Figure 5. Level of competency for written and spoken English	19
Figure 6. Main purpose of trip to Australia	20
Figure 7. Main transport use	21
Figure 8. Size of travel group	22
Figure 9. Length of stay in Australia	23
Figure 10. Length of stay in Cairns	24
Figure 11. Destination after Cairns	25
Figure 12. Member of YHA	26
Figure 13. Searched information about Australia before trip	27
Figure 14. Kind of information searched for	28
Figure 15. Sources of information before trip	29
Figure 16. Sources of information during trip	30
Figure 17. Guidebook used	31
Figure 18. Awareness of cyclones in Australia	32
Figure 19. Knowledge about cyclone-affected areas	33
Figure 20. Information about cyclones before trip started	33
Figure 21. Found information about cyclones during trip	34
Figure 22. Source of information about cyclones	35
Figure 23. How useful was the information?	35
Figure 24. Was the information enough?	36
Figure 25. Searched for more information about cyclones	37
Figure 26. Source of up to date cyclone information	38
Figure 27. Cyclone safety information at accommodation	39
Figure 28. Cyclone season	40
Figure 29. More destructive cyclone	41
Figure 30. Description of a storm surge	42
Figure 31. Influence of cyclone preparedness on choice of accommodation	43
Figure 32. Planned trip with cyclone season in mind	44
Figure 33. What to do in case of a cyclone	45
Figure 34. Threat of cyclones	47
Figure 35. Lived in a cyclone prone area	47
Figure 36. Travelled in a cyclone prone area	48
Figure 37. Internet use during trip	49
Figure 38. Time spent on the Internet in a week	49
Figure 39. Place of use of the Internet	50
Figure 40. What backpackers use the Internet for	51
Figure 41. Visited tourism websites	52

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Executive summary

- Based on the English competency level of the backpackers, 97 percent of them should be able to understand cyclone safety information
- The main purpose of backpackers to visit Australia was holiday. Literature indicates that people on holiday are in a pleasure-seeking mood and tend to ignore the risk and show a low level of natural disaster awareness.
- The influence of cyclones on the trip of backpackers was minimal, since 219 of the 220 backpackers did not plan their trip according to the cyclone season.
- The general awareness of cyclones amongst backpackers was relatively high, as almost three-quarters of the backpackers were aware of cyclones occurring in Australia. However, backpackers are extremely vulnerable to the impact of tropical cyclones since their concern as well as their level of knowledge about cyclones was minimal.
- Two third of the backpackers were travelling in small informal groups. This potentially increases their safety and security.
- As backpackers mainly used the bus as mean of transport during their trip through Australia it is recommended that cyclone safety information be provided at bus stops.
- The most popular source of information during and before the trip of backpackers was a guidebook. The most popular guidebook was the Lonely Planet, used by more than half of the backpackers; therefore a chapter might be included with cyclone safety information.
- Amongst the backpackers there was not one particular idea what to do if a cyclone is heading for the coast. Most of them would ask for information, evacuate or shelter. Nevertheless all of these three options are plausible.

- Pamphlets with cyclone information directed to backpackers should be designed in a visually attractive way, as backpackers are not interested in complex and detailed cyclone information. The interests and behaviour of the backpackers has to be taken into consideration at the design of specific cyclone information.
- Almost all of the backpackers used the Internet during their trip. However it is rarely used as a source of information. Therefore it is recommended to set up or refer to an Internet site that should be clearly identified in pamphlets.
- It is important that accommodation providers supply information brochures and pamphlets to visitors. As not all the accommodation providers were willing to seek out information, responsibility of delivery of cyclone information may fall on council and emergency managers.
- Not all the staff of the accommodations had knowledge of the emergency safety plans. Nevertheless it is important that all the employees understand these plans. In case of a cyclone it is important the staff is well aware of the safety procedures.
- The objective of this project was to contribute to the knowledge and understanding of how to improve awareness of the tropical cyclone risk among backpackers and the mode and style of delivery of cyclone awareness campaigns targeted towards backpacker tourists.
- This project was an expansion of a previous project carried out by the Centre for Disaster Studies in 2000, also supported by the Cairns City Council, which was performed outside the cyclone season. As an extension on the previous project this study was also focused on the information resources of backpackers.
- The interviews were taken during February, March and April within the cyclone season of 2003, where 220 backpackers and 8 accommodation providers were interviewed.
- The general backpacker characteristics correspond with the results of the previous study, since backpackers tend to be young, well educated people.

Abstract

The objective of this project is to contribute to the knowledge and understanding of how to improve awareness of the tropical cyclone risk among backpackers and the mode and style of delivery of cyclone awareness campaigns targeted towards backpacker tourists.

This project is an expansion of a previous project carried out by the Centre for Disaster Studies in 2000, also supported by the Cairns City Council, which was performed outside the cyclone season. As an extension on the previous project this study also focused on the information resources of backpackers.

Backpackers are in general aware of cyclones in Australia, although their specific knowledge about cyclones is minimal. The behaviour of backpackers is not influenced in regards to the hazards of cyclones, as backpackers did not plan their trip according to the cyclone season, even though aware of it. When a severe cyclone is heading for the coast, backpackers may act in various ways: look into what to do, evacuate, shelter or stay, all plausible actions.

Because backpackers are not likely to search in an active way for cyclone information prior to a cyclone warning, the current passive cyclone awareness campaigns should be changed to more active campaigns directed to backpackers. The recommended way to provide cyclone information to backpackers is by pamphlets and brochures at accommodation providers with a direction to an Internet site. Moreover, information can be provided at bus stops and in guidebooks like the Lonely Planet.

Regarding the accommodations providers, improvements can be made in the way they are prepared for cyclones. To ensure the safety of backpackers all the staff of accommodations should be well informed about the safety procedures present.

1. Introduction

A significant number of the tourists visiting the popular tourist destinations of Cairns and the coast up to Cape Tribulation are backpackers. These places are located in the coastal area of Queensland, and are prone to tropical cyclones. Backpackers are considered more vulnerable to the impacts of tropical cyclones compared to other tourists, because they are independent. Therefore the accommodation providers have a big responsibility towards cyclone safety.

This project is an expansion of a previous project, carried out by the Centre for Disaster Studies in 2000, which was performed outside the cyclone season. The report of this study was finished in 2001. In the 2001 report, the previous experience with tropical cyclones of backpackers was investigated, as well as their general knowledge and awareness about tropical cyclones, their preparedness and perceptions of risk were investigated. This study is focussed on the above subjects, and the information resources of backpackers to determine the best way to reach them with information about tropical cyclones.

The objective of this project is to contribute to the knowledge and understanding of how to improve awareness of the tropical cyclone risk among backpackers and the mode and style of delivery of cyclone awareness campaigns targeted towards backpacker tourists.

The main aims of the project are to:

- Determine awareness of the cyclone and storm surge hazards among backpacker tourists in Cairns during the 2002-2003 tropical cyclone season;
- Determine how and where backpackers acquire information about the tropical cyclone risk and any recommended preparatory and defensive action behaviours;
- Compare results of the current study with those of a previous study carried out during the non-cyclone season;
- Identify tropical cyclone awareness education and information needs;
- Recommend tropical cyclone awareness education strategies.

2. Literature review and background to study

The need to understand vulnerability in a study about natural disasters and the risk they are to a community is immanent. This risk of disasters to communities is dependent on three factors; hazard, elements at risk and vulnerability. Natural disasters, like cyclones, cause significantly more risk to the safety of people when their vulnerability is relatively high.

Natural Disaster

'In the modern world, there is an increasing paradox between the outstanding achievements in science and medicine, which make life safer and healthier, and the continuing death and destruction associated with so-called 'natural hazards' (Smith, 1996).

While the trend of the frequency of disasters is progressively increasing over time, the tendency has been for deaths to diminish relatively, while economic losses to property, infrastructure and business have increased dramatically. This is influenced by continuous improvements in event monitoring and global communications. The term disaster is generally used when large numbers of people exposed to hazards are killed, injured or damaged in some way. Disaster is a human construct. It occurs when a natural hazard overwhelms a human population or community.

Risk/Hazard

Hazard is best viewed as a naturally occurring or human induced process or event with the potential to create loss, a general source of danger. Risk is the actual exposure of something of human value to a hazard and is often regarded as the combination of probability and loss, according to Smith (1996). In a summary, *hazard* (or cause) can be defined as a potential threat to humans and their welfare and *risk* (or consequence) as the probability of a specific hazard occurrence.

Risk is the outcome of the interaction between a hazard phenomenon and the elements at risk within the community (i.e. the people, buildings and infrastructure) that are vulnerable to the impact of a natural disaster (Granger, 1999). The relationship can be expressed in pseudo-mathematical form as:

$$\text{Risk}_{(\text{total})} = \text{Hazard} \times \text{Elements at Risk} \times \text{Vulnerability}$$

Thus to estimate risk we must understand the hazard, the human elements, that are at risk and the vulnerability of the population.

Cyclones

According to the Bureau of Meteorology a tropical cyclone is an extreme low pressure system in the tropics which, in the Southern Hemisphere, has a well defined clockwise wind circulation with a region surrounding the centre with gale force winds (sustained winds of 63 km/h or greater with gusts in excess of 90 km/h) (EMA & BOM, 2002).

Tropical cyclones only arise over oceans with a minimum temperature of 26,5 °C, and within 5°-12° north and south of the equator. They create mainly coastal hazards, because most of the systems decay rapidly over land areas (Smith, 1996). Therefore, the coastal areas of the northern half of Australia are prone to tropical cyclones.

Tropical cyclones are divided into five categories; with category five being the most severe. The three most common hazards that are associated with tropical cyclones are; strong winds, heavy rainfall with flooding, and storm surges (EMA & BOM, 2002). Storm surges are coastal inundations of the sea, caused by the low pressure of the centre of a cyclone.

Vulnerability

The term vulnerability has a commonplace meaning: being prone or susceptible to damage or injury. A working definition is: the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard. Some groups in society are more prone than others to damage, loss and suffering from different hazards. Key characteristics of these variations of impact are for example class, ethnicity, gender, disability and age. From this it can be deduced that vulnerability is closely correlated with socio-economic positions (Blaikie, 1994).

According to the theory of Granger (1999), there are five elements at risk in the community and their vulnerability. The first element is the *setting*. This contains the basic topics, like physical environment, infrastructure, and administrative arrangements. The second element is places of *shelter*: the buildings that provide shelter to the community at home, at work and at play. The next element is *sustenance*. This includes the service infrastructures such as water supply, sewerage, power supply and telecommunications. Next is the *security* of the community, measured in terms of its health and wealth and by the forms of protections that are provided. For example, hospitals and fire stations are protection facilities. The final element is the *society*. The society is measured in terms of language, education, religion, awareness and so on. These elements together provide an adequate measure of *overall community vulnerability*.

Tourists are at greater risk than local residents, because they are unfamiliar with the place. When they find themselves at risk in unfamiliar places, tourists are often not equipped with a self-protective behaviour (Burby & Wagner, 1996). That is why cyclone preparedness for tourists needs special attention.

Community

The community is not easy to define. It could be defined as a universal focus of social activity. In general, communities occupy physical space and can be characterised in part by their terrain and climate conditions. Because communities are very complex systems of human activity, it is useful to define a community as a multi organisational system. A community can be described as a location of social action (Quarantelli, 1998). In relation to this investigation, the location of social action is the region of Cairns.

A community can also be described as a combination of social units and systems that perform the major social functions having locality relevance. The major social functions are: production-distribution-consumption, socialisation, social control, social participation and mutual support (Kramer, 1975). The target group of this project is backpackers, a bounded part of the tourist community.

Backpackers

The backpacker community is likely to be particularly vulnerable to tropical cyclones. Backpackers can be defined according to social criteria that include; a preference for budget accommodation, an emphasis on meeting other travellers, an independently arranged and flexible travel plan, longer vacations and a preference for informal, unstructured vacation activities (Pearce, 1990). The CDS report (2001) found that backpackers tend to be young and well educated people, but their independently arranged and flexible travel plans make backpackers especially vulnerable to natural disasters and hard to target by emergency managers. Moreover, backpackers often lack previous experiences with cyclones, and there is no efficient source of cyclone information available for them. Amongst the backpackers, the concern about cyclones, as well as their cyclone awareness and knowledge is relatively poor. One of the recommendations that follow out of the CDS report study is to inform backpackers through the Internet, as this is one of their most important sources of information.

Awareness and perception

There is a common assumption in the literature and in public action on natural hazards that heightened awareness of hazards leads to greater likelihood of adoption of mitigation measures. At the same time, there is increasing scepticism that more information by itself will lead to appropriate adjustments. It has been documented many times that planning to overcome the worst effects of natural hazards is most intense immediately after an extreme hazard event (Saarinen, 1982).

Information resources

Because backpackers tend to travel independently, they tend to gather their own information for the trip. The earlier CDS report (2001) indicates that the three most commonly used information resources about next destination are guidebooks, friends and word of mouth. However, the source of information for the most up to date information about cyclones would be local residents, followed by the Internet. In other words, backpackers use informal networks to make decisions about where to travel, but consult formal sources to find out more information about intended destinations. Almost half of the backpackers in Cairns were not informed at all about cyclones in Northern Australia, whereas the most frequently used sources of cyclone information are news/radio, word of mouth and general knowledge.

Cyclone warning service

In Australia, there are several public warning messages that may be issued during the season. As the threat increases, more detailed information will be included in the advices given to the community.

The tropical cyclone watch is an advice that is issued every 6 hours when it is suspected that gales or stronger winds reach coastal communities within 48 hours, but not within 24 hours. This advice includes the cyclone's location, intensity, severity category and movement. The next step in warning signals is the tropical cyclone warning, which is an advice that is issued every three hours when it is suspected that gales or stronger winds will reach coastal communities within 24 hours. The warning includes more detailed information about the cyclone, the hazards, and advises about precautions. When a cyclone is under radar surveillance nearby the coast, even hourly advice may be broadcasted.

When a cyclone stronger than category two is suspected to affect a community within 12 hours, an audible standard emergency warning signal is sounded on broadcast

media. Another way used to inform the community is via a cyclone track and threat map, which shows the current location of a cyclone, the watch and warning area and area's of strong wind speeds. For households, there is a checklist available about cyclone preparedness and safety procedures (EMA & BOM, 2002).

Thus while a series of warnings and advice on cyclones and precautions are available to the general public there is a strong probability that backpackers may fail to access or interpret that information. In fact research carried out in Cairns (Anderson-Berry, 2002) amongst the resident community of the Northern Beaches suburbs has shown that levels of cyclone awareness and preparedness are limited and in some situations quite poor. Backpackers and independent tourists are added to this resident community but not absorbed into it, owing to the transitory nature of their visit. Thus backpackers have even less awareness than residents of the cyclone hazard and extremely limited access to information about the hazard that is available to residents. They are therefore an especially vulnerable community and deserving of the host community's duty of care.

3. Methodology

3.1 Survey design & technique

Two questionnaires were formulated for this research project. One of them was designed to investigate the awareness and knowledge about tropical cyclones and its hazards amongst backpackers, and which information sources they used. The target was to interview at least 200 backpackers.

The second questionnaire was designed for the accommodation providers with questions to determine the information about tropical cyclones that is presented to the visitors and their opinion about the potential risks. Eight accommodation providers were interviewed.

The objective of the project is to contribute to the knowledge and understanding of how to improve awareness of the tropical cyclone risk amongst backpackers and the mode and style of delivery of cyclone awareness campaigns targeted towards backpacker tourists.

3.2 Questionnaire composition

3.2.1 Backpackers

The questions about the personal details were formulated to get an overview of the origin, age and level of education of backpackers. Based on these characteristics the study can be compared to previous studies, and this data can be used to determine significant connections between data. The style of travelling is divided in multiple questions namely the duration of stay in Australia and Cairns, the main purpose of staying in Australia and the next destination after Cairns.

Several questions were added about the information sources used to gather information about Australia and tropical cyclones before and during the backpackers' trip through Australia. From this, conclusions can be drawn regarding which information sources could be improved with further information about tropical cyclones. The knowledge and awareness of tropical cyclones amongst backpackers was determined by asking specific questions about cyclones. These specific questions included questions about the cyclone season, the meaning of a storm surge and areas in Australia that are cyclone prone. Recommendations about the mode of information can be formulated from the results of these questions. Questions about the possible

damage caused by a tropical cyclone and how to behave in case of an emergency illustrate the attitude and concern about tropical cyclones.

3.2.2 Accommodation providers

Backpacker accommodation providers were interviewed to ascertain their views and behaviour. Questions about the number of beds and the occupancy rate are formulated to get an overview of the accommodation provider characteristics. The concern about cyclones is determined by questions about the effect and risk level of cyclones.

There are also some questions to get an indication about the information for visitors and the mode of information delivery. The last questions are about the preparedness of accommodation providers for cyclones: where they gather cyclone information during the cyclone season and the emergency plans.

3.3 Sample population selection

Interviewing of the backpackers was carried out inside backpacker accommodation, as well as at public areas like the Esplanade and Lake Street Mall. The addresses for the administration of the interviews at accommodation locations were taken from an official list provided by the Cairns City Council. Systematic random sampling was used because of the large amount of accommodation providers and backpackers in order to obtain an overview of a selected group that is similar to the population in its position.

The interviews were carried out during the wet season of 2003, during the months of February, March and April. Every interview was conducted face to face by one of the two Principal Investigators. Interviewing was paused while a cyclone was active in the region in order to ensure that all interviews were conducted under comparable conditions.

3.4 Data analysis

The analysis of the survey data was carried out by the use of SPSS version 11.0. The outcomes of these analyses are displayed as frequency tables, and bar diagrams. Some questions gave respondents the opportunity to give more than one answer, which required a specific approach concerning the data analysis. Only two of the answers to these questions are recorded, with the first two selected out of the given answers. The category "No second answer given" is added so when the answers of these questions are summed up, the total amount of answers is twice as many as there

are respondents. As a result of this, the answers of the individual respondents are not equal, although they still give a reliable indication.

3.5 Study area

The interviewing for this project was carried out in Cairns and Cape Tribulation. Both are located in Tropical Far North Queensland, functioning as a gateway to the Great Barrier Reef and Tropical Rainforests (Berry in 2000 study). Cairns is the capital of Tropical Far North Queensland and has a population of 123,760 inhabitants. The Far North Statistical Division's takings from tourism accommodation in the 12 month ended March 2002 were \$272.7 million, accounting for 21.8% per cent of Queensland's takings from accommodation. Cairns City contributed for 43.8% (\$119.4 million) to the takings of The Far North Statistical Division, and 4,521 rooms within 54 establishments were located within the area of Cairns (OESR, 2002).

Both Cairns and Cape Tribulation are located in the tropical cyclone prone area North of Australia. Amongst the 53 cyclones in the history of Cairns that caused a measured or reported impact on Cairns, at least 11 of them have done substantial damage or caused significant dislocation. Recent cyclones that headed straight over Cairns were category 2 cyclone Justin in 1997 with wind gusts of 128 km/h, damaging Cairns for over \$2 million and category 2 cyclone Steve. Cyclone Steve hit Cairns on the 27th of February 2000 and caused major flooding between Cairns and Mareeba. Wind gusts of up to 140 km/h caused hundreds of trees to be uprooted and powerlines were brought down, disrupting supplies to over 40,000 residents. Fallen trees and landslides caused the two highways to the Atherton tablelands to be closed. Cyclone Steve damaged the sugarcane crops for over \$20M (AUD), and the total estimated damage done by this cyclone in North Queensland was over \$100M (AUD) (BOM, 2003). In 1999, category 3 cyclone Rona crossed the coast near Cape Tribulation, the most recent cyclone near Cape Tribulation (Granger, 1999).



Picture 1. Flooding caused by cyclone Steve in 2000

3.6 Constraints of the study

This investigation was carried out during the wet season. However, during the period of interviewing two actual cyclone watches were issued that resulted in two temporary interview stops. The respondents that were interviewed after the watches might be more aware about tropical cyclones.

As some Asian visitors could hardly understand the English language, it was impossible to interview them. As a result, the origin of the respondents is less representative of Asians.

A few hostels were visited more than one time, because at these hostels many respondents were located so they could be interviewed. This might influence the outcomes of the questions about the cyclone safety in the accommodation.

As the managers of the accommodation were hard to reach the desk employees of some facilities were interviewed instead of the managers. They might have had less knowledge about cyclone safety management than the manager, which could affect the outcomes of the survey.

4. Results

4.1. Backpackers

4.1.1 Backpacker characteristics

Several general questions were asked of the respondents, to get an overview of the characteristics of backpackers.

There was no gender bias in the survey and this may be taken to be representative of the general backpacker population.

	Frequency	Percent
Female	112	50.9
Male	108	49.1
Total	220	100.0

Table 1: Gender

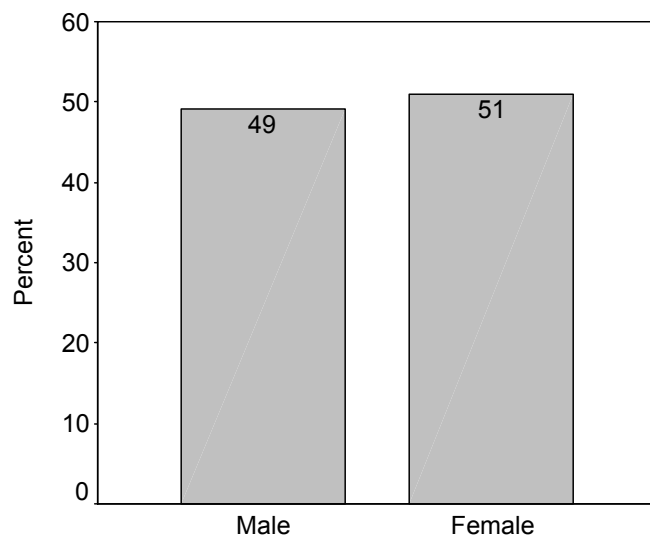


Figure 1: Gender

In general, the age of the respondents was between 20 and 25 years, as shown in table 2. Of the age cohorts the range is very narrow with the other youthful age categories between 16 and 30 making up 31%, almost all, of the rest of the respondents.

	Frequency	Percent
0-15 Years old	1	.5
16-19 Years old	27	12.3
20-25 Years old	137	62.3
26-30 Years old	41	18.6
31-40 Years old	12	5.5
>40 Years old	2	.9
Total	220	100.0

Table 2: Age

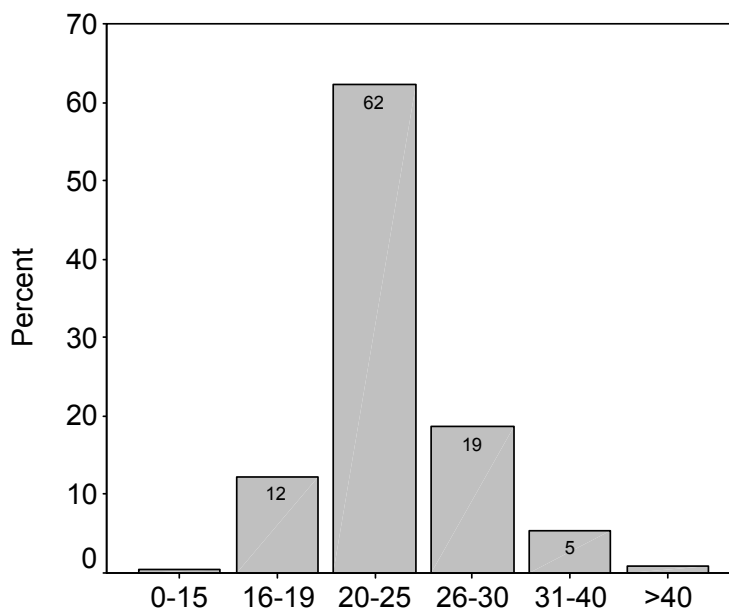


Figure 2: Age

Most of the backpackers originated from the United Kingdom (46.4%) and other countries of Europe (40.0%). The other countries of origin were the USA and Canada (5.9%), Israel (3.6%), Asia (1.8%), New Zealand (1.4%) and others (0.9%). See table 3.

	Frequency	Percent
UK	102	46.4
Europe (except UK)	88	40.0
USA and Canada	13	5.9
Israel	8	3.6
Asia	4	1.8
New Zealand	3	1.4
Other	2	.9
Total	220	100.0

Table 3: Origin of backpackers

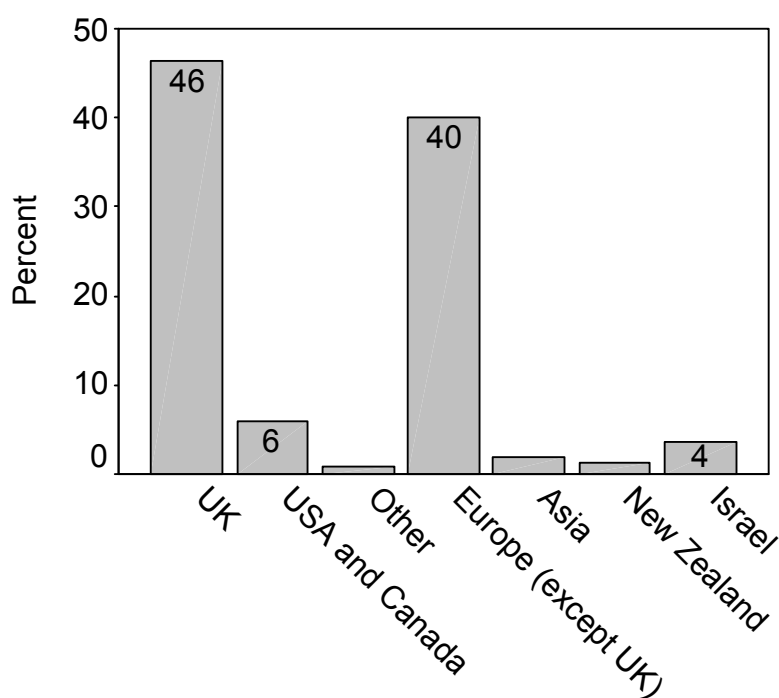


Figure 3: Origin of backpackers

The majority of the backpackers have attained university (55.0%) or high school (26.8%) qualifications, as indicated in table 4. Many of those who have completed high school qualifications may have attended or be attending tertiary education, as the question asked what was the highest level of education achieved. Backpackers are clearly a very highly educated group, probably much more educated than the general tourist population,

	Frequency	Percent
Secondary school	12	5.5
High school	59	26.8
College	28	12.7
University	121	55.0
Total	220	100.0

Table 4: Educational level

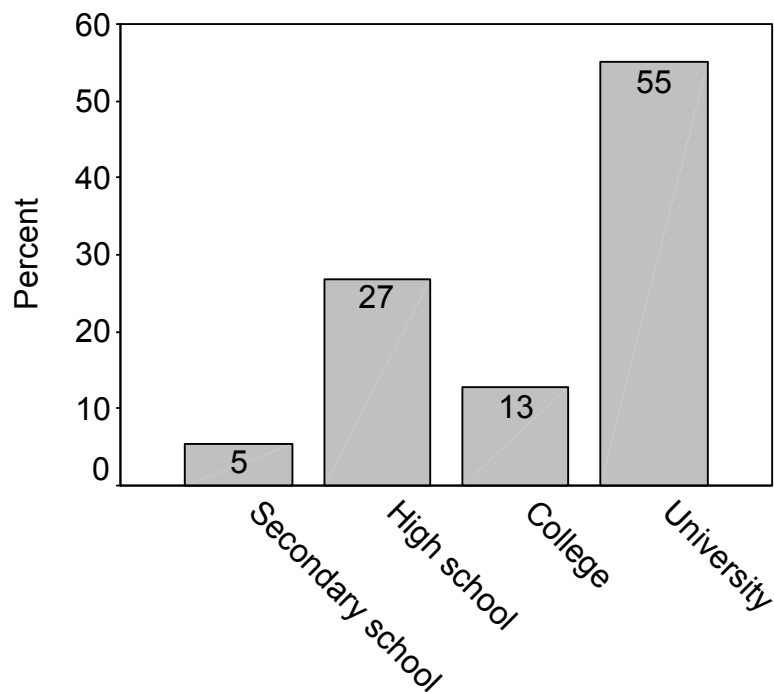


Figure 4: Educational level

The written and spoken English competency level of the majority of the respondents was fluent (74.5%), as described in table 5. This was partially caused by the fact that English was the first language for many backpackers. Out of the 102 backpackers that did not had English as first language, 94.1% considered their competency level of English adequate to be fluent.

	Frequency	Percent
Fluent	164	74.5
Adequate/Fluent	28	12.7
Adequate	22	10.0
Limited/Adequate	4	1.8
Limited	2	.9
Total	220	100.0

Table 5: Level of competency for written and spoken English

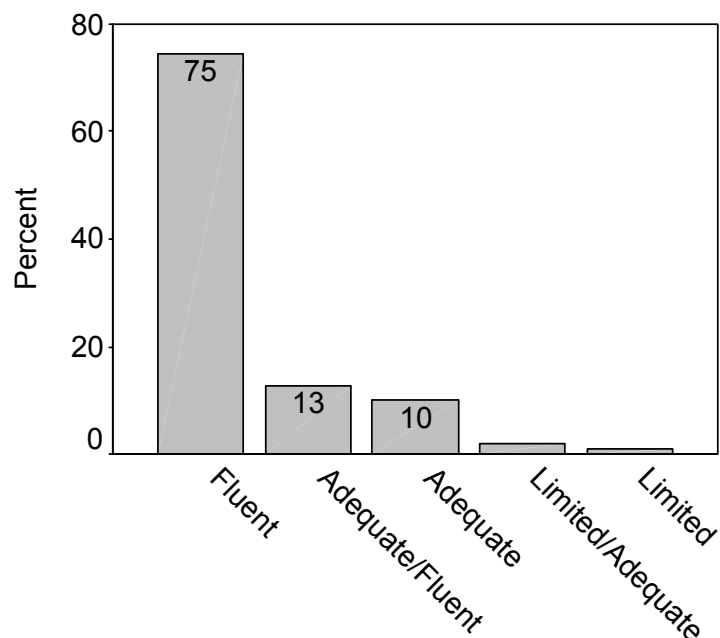


Figure 5: Level of competency for written and spoken English

4.1.2 Style of travelling

The main purpose for staying in Australia was holiday for most of the respondents (69.5%). A part of the backpackers were also in Australia for the combination of working and holiday (10.9%), whilst others came to visit friends or relatives (5.5%) and because of study purposes (3.6%), as shown in table 6. In this sense they are primary tourists.

	Frequency	Percent
Holiday	153	69.5
Working/Holiday	24	10.9
Visit friends/relatives	12	5.5
Study	8	3.6
Working	7	3.2
Language	4	1.8
Environment	4	1.8
Cultural	4	1.8
Other	3	1.4
Adventure sport	1	.5
Total	220	100.0

Table 6: Main purpose of trip to Australia

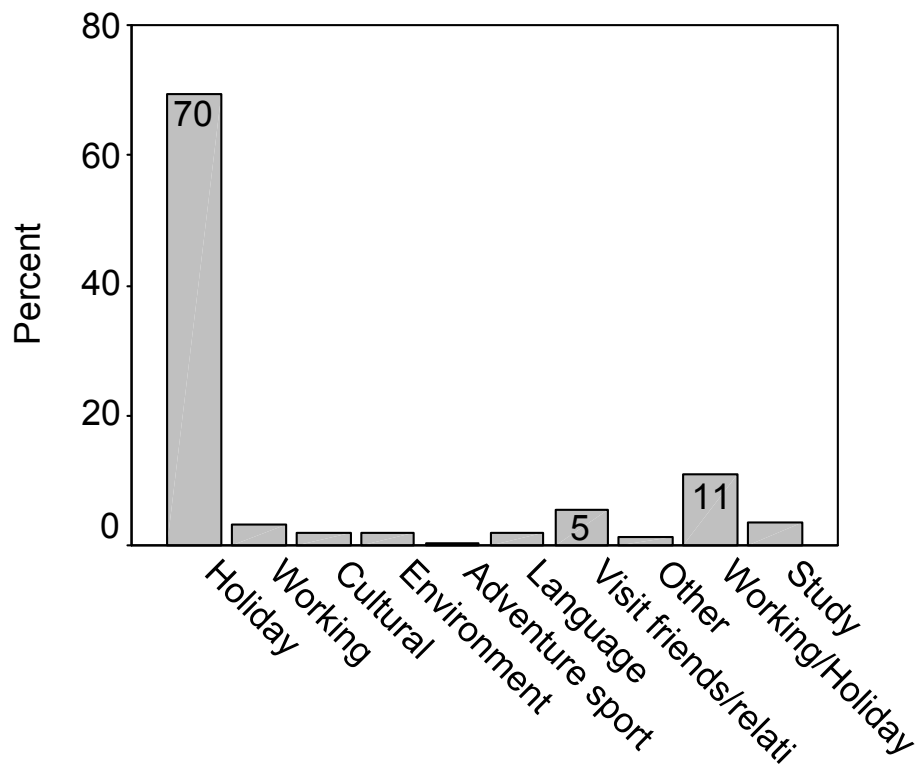


Figure 6: Main purpose of trip to Australia

Table 7 shows that most of the respondents used the bus (67.7%) as their main mean of transport while travelling through Australia. Both car (20.0%) and plane (7.3%) were also popular amongst the backpackers visiting Australia. As primary bus travellers they experience a more detailed network of places and have enormous flexibility of destination, route and duration of visit.

	Frequency	Percent
Bus	149	67.7
Car	44	20.0
Plane	16	7.3
Van	5	2.3
Train	3	1.4
4WD	1	.5
Bicycle	1	.5
Hitchhiking	1	.5
Total	220	100.0

Table 7: Main transport use

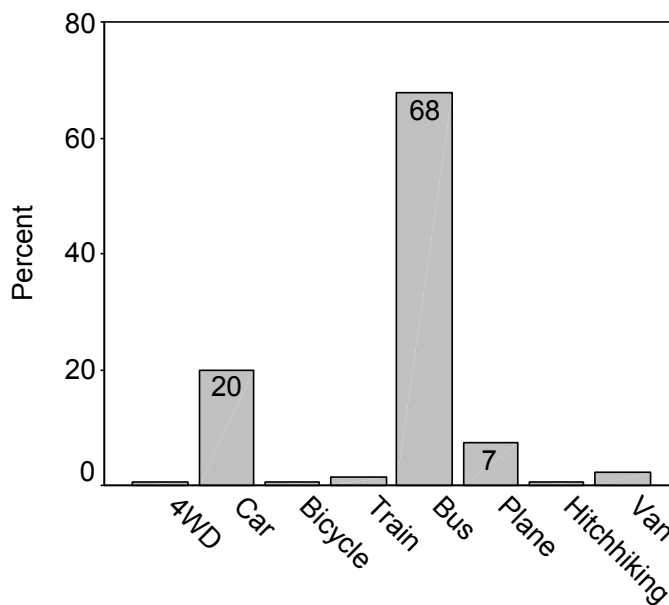


Figure 7: Main transport use

Table 8 shows that 67.7% of the respondents were travelling in a small informal group, 31.4% of them were travelling alone and only a small part (0.9%) were travelling in a group, according to table 8. This is a particularly interesting finding, though frustrating that we do not know whether these informal groups were formed prior to arrival in Australia or while travelling within the country. Undoubtedly, both types are represented and are illustrative of both the social nature of this type of tourism as well as being indicative of an informal strategy of security.

	Frequency	Percent
Alone	69	31.4
Small informal group	149	67.7
Group	2	.9
Total	220	100.0

Table 8: Size of travel group

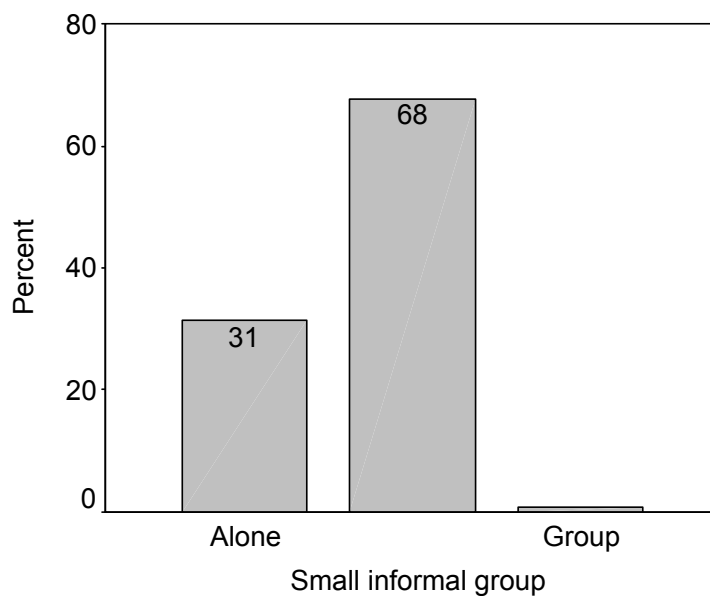


Figure 8: Size of travel group

The total length of stay in Australia was between 2 and 4 months for 30.9% of the backpackers, followed by 24.5% that stayed between 2 weeks and 2 months, as shown in table 9. As the question asked respondents how long they intended to stay in Australia rather than simply how long they been here, it is clear that most are significant stay tourists, but probably not primarily working their way, as those visas are for up to 12 months.

	Frequency	Percent
< 2 weeks	1	.5
2 weeks < 2 months	54	24.5
2 months < 4 months	68	30.9
4 months < 6 months	31	14.1
6 months < 8 months	22	10.0
8 months < 10 months	7	3.2
10 months - 12 months	33	15.0
> 1 year	4	1.8
Total	220	100.0

Table 9: Length of stay in Australia

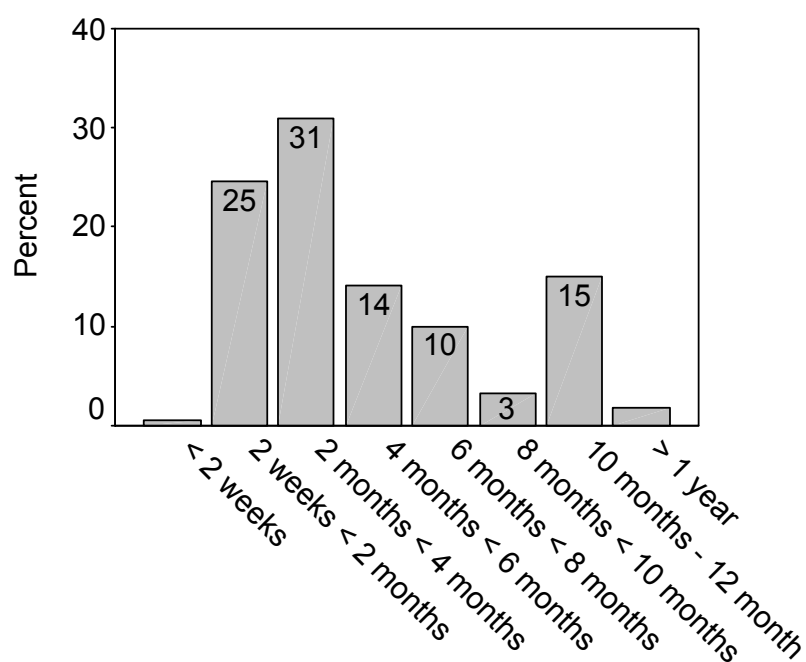


Figure 9: Length of stay in Australia

The majority of the participants stayed in Cairns between 1 and 14 days. This majority is divided in the 3 groups: between 1 and 3 days (20.5%), between 4 and 7 days (25.0%) and between 8 and 14 days (26.8%). See table 10.

	Frequency	Percent
1-3 days	45	20.5
4-7 days	55	25.0
8-14 days	59	26.8
15 days - < 1 month	24	10.9
1 month - 3 months	27	12.3
> 3 months	8	3.6
Don't know	2	.9
Total	220	100.0

Table 10: Length of stay in Cairns

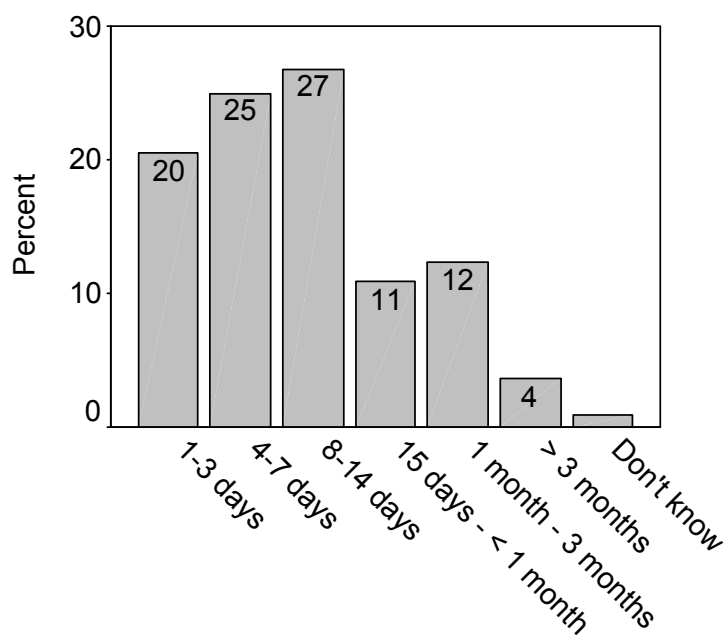


Figure 10: Length of stay in Cairns

After visiting Cairns, 34.1% of the backpackers went to another location in Queensland, followed by 22.7% of the respondents that went to the Northern Territory (22.7%). An overseas country was for 9.1% of the backpackers the next destination, whereas 7.7% of the backpackers went home after Cairns, as indicated in table 11. Thus although the stay in Cairns was less than 2 weeks for most respondents, their journeys were likely to keep them in a cyclone prone area for a longer period.

	Frequency	Percent
QLD	75	34.1
NT	50	22.7
NSW	31	14.1
Outside Australia	20	9.1
Home	17	7.7
VIC	14	6.4
WA	8	3.6
SA	4	1.8
No response	1	.5
Total	220	100.0

Table 11: Destination after Cairns

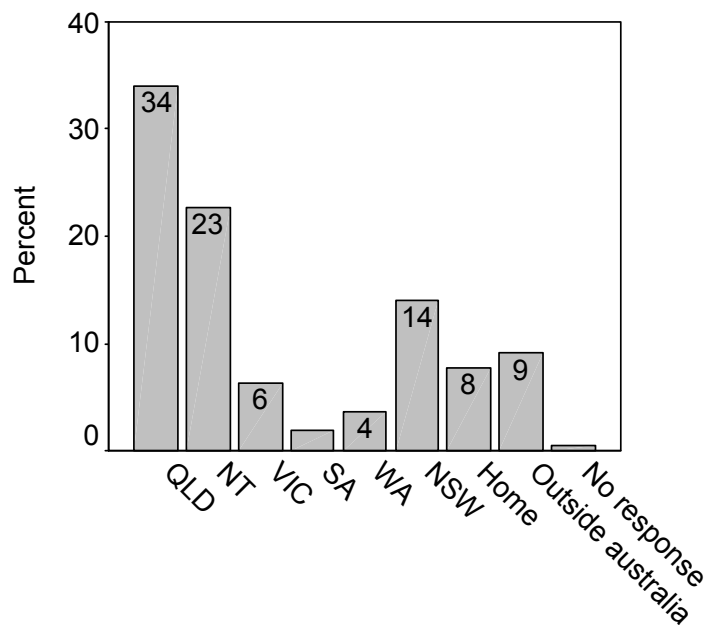


Figure 11: Destination after Cairns

The Youth Hostel Association (YHA) is a well-known accommodation provider for backpackers, with 28.2% of the respondents members of the YHA, see table 12. This is clearly a major target for hazard and security information.

	Frequency	Percent
Yes	62	28.2
No	157	71.4
No response	1	.5
Total	220	100.0

Table 12: Member of YHA

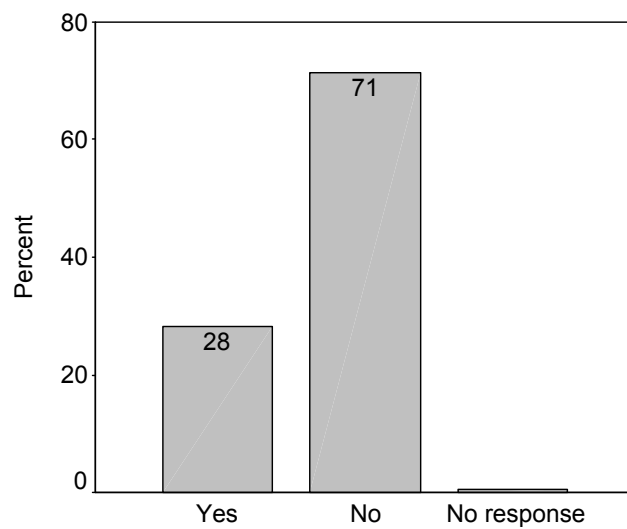


Figure 12: Member of YHA

4.1.3 Sources of information

The respondents could give one or two answers to the question about the information sources that they used before and during their stay in Australia.

The majority (77.3%) of the backpackers searched for information about Australia before they started their trip, as shown in table 13.

	Frequency	Percent
Yes	170	77.3
No	50	22.7
Total	220	100.0

Table 13: Searched information about Australia before trip

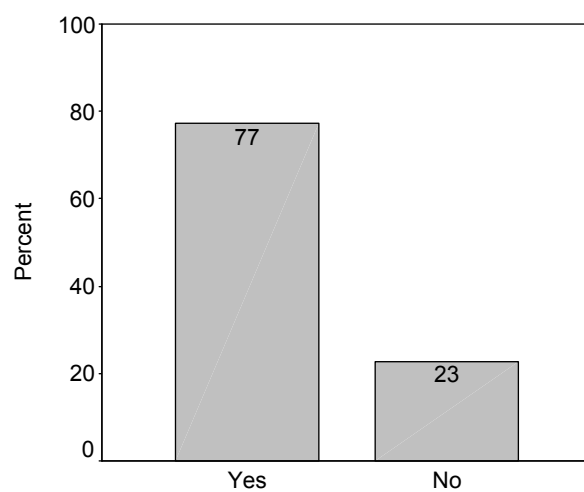


Figure 13: Searched information about Australia before trip

Before backpackers started travelling, they mainly searched for information about places of interest (34.9%), accommodation (24.4%) and trips (23.7%), see table 14. It can be assumed that they are not and probably will not search for information about hazards. This will need to be embedded within other sources of information.

	Frequency	Percent	Valid Percent
Places of interest	103	23.4	34.9
Accommodation	72	16.4	24.4
Trips	70	15.9	23.7
Transport	24	5.5	8.1
Other	9	2.0	3.1
Nature	8	1.8	2.7
Prices	5	1.1	1.7
No response	4	.9	1.4
Total	295	67.0	100.0
No 2 nd answer	45	10.3	
Not searched for information	100 (50)	22.7	
Total	440	100.0	

Table 14: Kind of information searched for

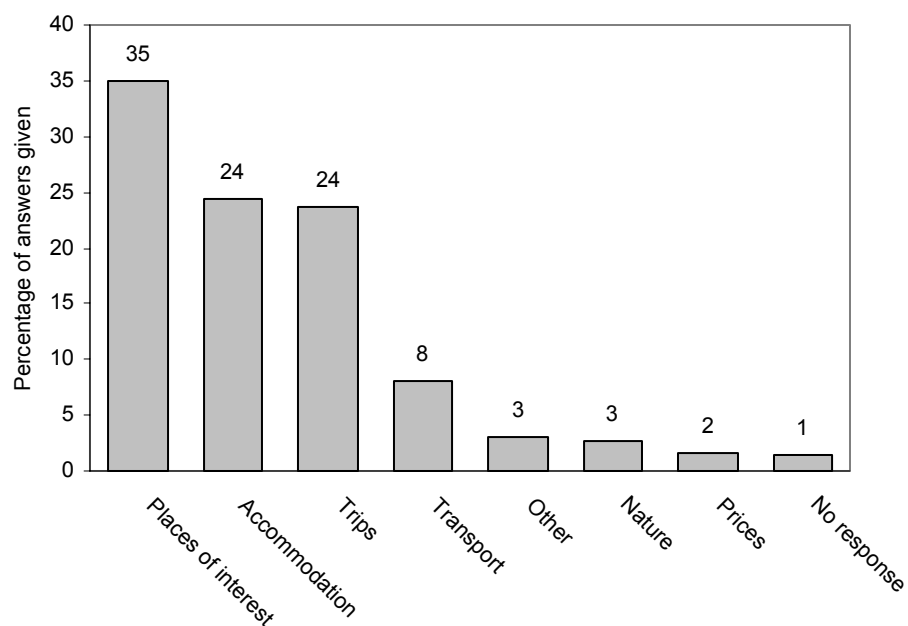


Figure 14: Kind of information searched for

The respondents used many kinds of information sources to search for information before their trip. The main part (46%) of the backpackers used a guidebook, whereas the second most popular information source was the Internet (30.4%). Two other information sources were information agents (offices that provide information to tourists) and friends, each counting for 10.3% of the answers (table 15).

	Frequency	Percent	Valid Percent
Guidebooks	121	27.5	46.0
Internet	80	18.2	30.4
Information agents	27	6.1	10.3
Friends	27	6.1	10.3
Relatives	6	1.4	2.3
Embassy	1	.2	.4
Other	1	.2	.4
Total	263	59.8	100.0
No 2 nd answer	77	17.5	
Not searched for information	100 (50)	22.7	
Total	440	100.0	

Table 15: Sources of information before trip

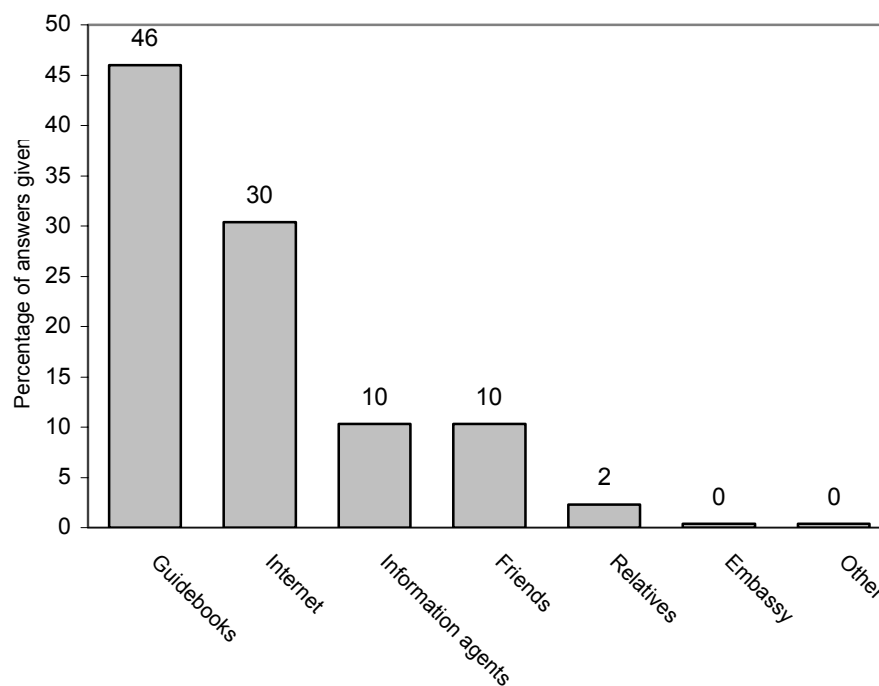


Figure 15: Sources of information before trip

All of the backpackers were gathering information during their trip. Not only was the guidebook the most popular source of information before the respondents started their trip, but also during their trip (44.3% of the answers). Other sources of information were talking to other backpackers (16.4%), information agents (16.2%) and the Internet (15.1%), see table 16.

	Frequency	Percent	Valid Percent
Guidebooks	167	38.0	44.3
Other backpackers	62	14.1	16.4
Information agents	61	13.9	16.2
Internet	57	13.0	15.1
Other	28	6.4	7.4
No response	2 (1)	.5	.5
Total	377	85.7	100.0
No 2 nd answer	63	14.3	
Total	440	100.0	

Table 16: Sources of information during trip

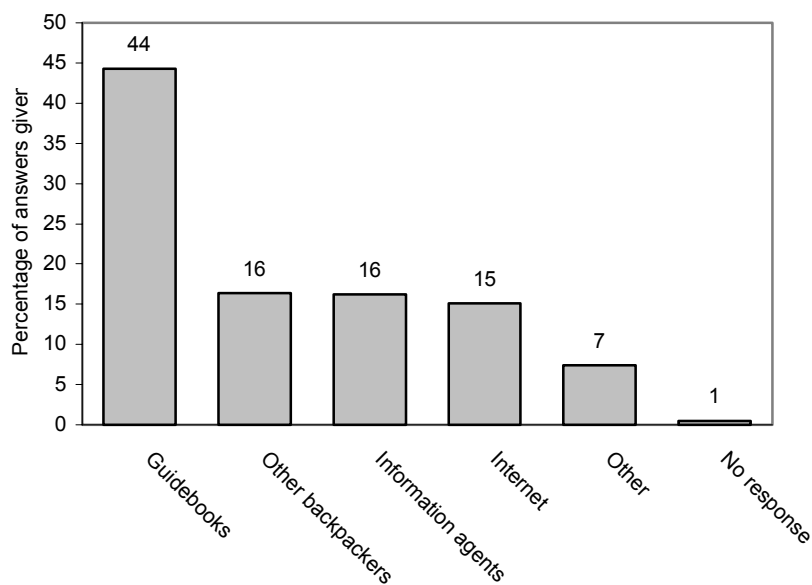


Figure 16: Sources of information during trip

Amongst the backpackers that used a guidebook as information source during their trip the Lonely Planet was the most popular title (60.9%). A few backpackers used the Rough Guide (6.4%), as shown in table 17. These could clearly be approached for assistance in placing sensible hazard awareness information. This cannot be a role for a single tourist destination but would need to be facilitated at a regional or national level.

	Frequency	Percent
Lonely planet	134	60.9
Rough guide	14	6.4
Other	17	7.7
No response	2	.9
Total	167	75.9
No guidebook used during trip	53	24.1
Total	220	100.0

Table 17: Guidebook used

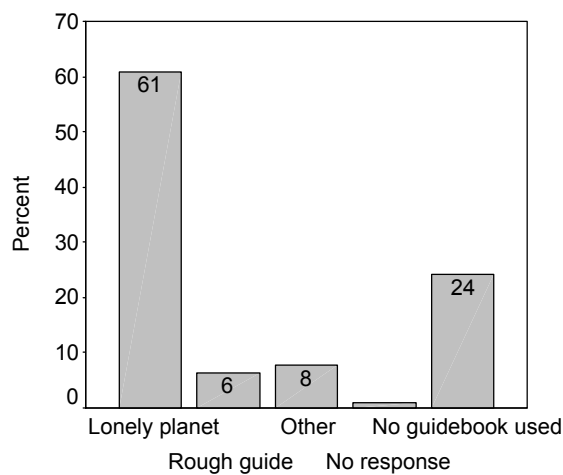


Figure 17: Guidebook used

4.1.4 General knowledge and awareness of cyclones

74.1% of the backpackers were aware that parts of Australia are affected by tropical cyclones. The right answer was the upper half coastal area of Australia. Most of these backpackers gave a correct answer to the follow-up question which area of Australia is affected by tropical cyclones, as table 19 shows.

	Frequency	Percent
Yes	163	74.1
No	57	25.9
Total	220	100.0

Table 18: Awareness of cyclones in Australia

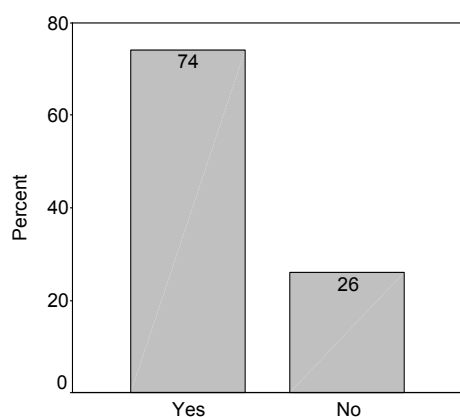


Figure 18: Awareness of cyclones in Australia

	Frequency	Percent
Correct	72	32.7
Partially correct	57	25.9
Incorrect	5	2.3
Don't know	29	13.2
Total	163	74.1
Not aware of cyclones in Australia	57	25.9
Total	220	100.0

Table 19: Knowledge about cyclone-affected areas

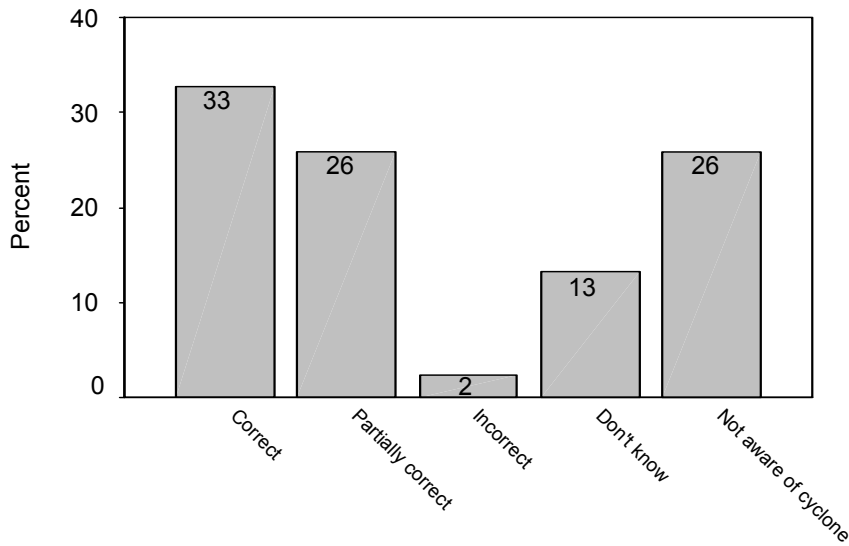


Figure 19: Knowledge about cyclone affected areas

Only 5% of the respondents found information about tropical cyclones before they started their trip, as shown in table 20.

	Frequency	Percent
Yes	11	5.0
No	159	72.3
Total	170	77.3
No information about Australia before trip	50	22.7
Total	220	100.0

Table 20: Information about cyclones before trip started

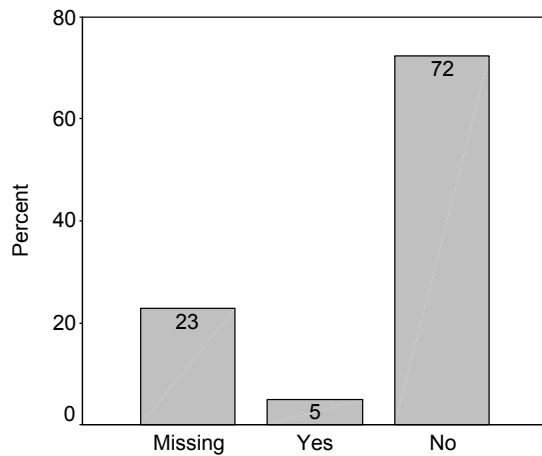


Figure 20: Information about cyclones before trip started

Only 30.5% of the backpackers got information about cyclones during their trip through Australia, according to table 21. Word of mouth (14.1%) and television (10.5%) are the sources where most of these backpackers got this information, see table 22.

	Frequency	Percent
Yes	67	30.5
No	153	69.5
Total	220	100.0

Table 21: Found information about cyclones during trip

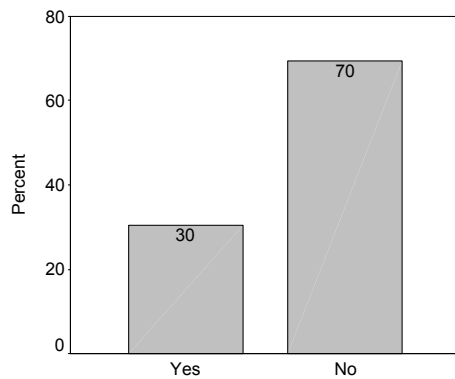


Figure 21: Found information about cyclones during trip

	Frequency	Percent
Word of mouth	31	14.1
TV	23	10.5
Other	6	2.7
Internet	2	.9
Brochures	2	.9
Radio	2	.9
Pamphlets	1	.5
Total	67	30.5
No information found about cyclones during trip	153	69.5
Total	220	100.0

Table 22: Source of information about cyclones

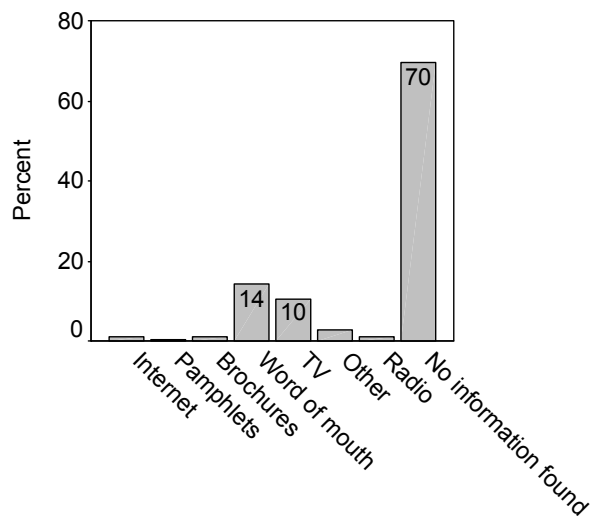


Figure 22: Source of information about cyclones

Generally, the information found about cyclones during their trip was moderate to very useful, as shown in table 23.

	Frequency	Percent
Very	25	11.4
Moderate	24	10.9
Not	14	6.4
No response	4	1.8
Total	67	30.5
No information found about cyclones during trip	153	69.5
Total	220	100.0

Table 23: How useful was the information?

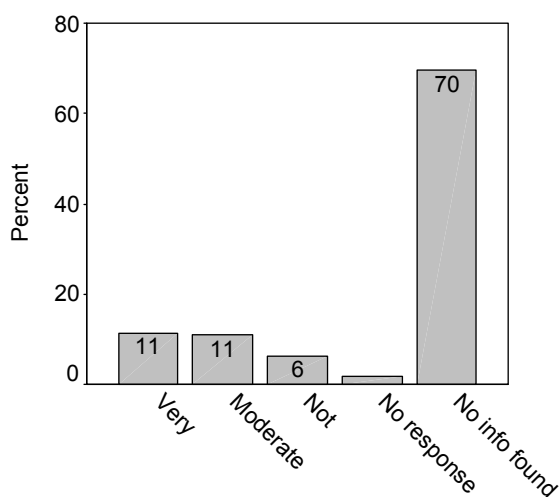


Figure 23: How useful was the information?

According to most of the respondents (21.8%) who found information about cyclones it was enough, 6.4% was not satisfied with this information, see table 24. A few backpackers (1.4%) searched for more information about cyclones as shown in table 25. It can be assumed that “no information found” includes no information being sought, either.

	Frequency	Percent
Yes	48	21.8
No	14	6.4
No response	5	2.3
Total	67	30.5
No information found about cyclones during trip	153	69.5
Total	220	100.0

Table 24: Was the information enough?

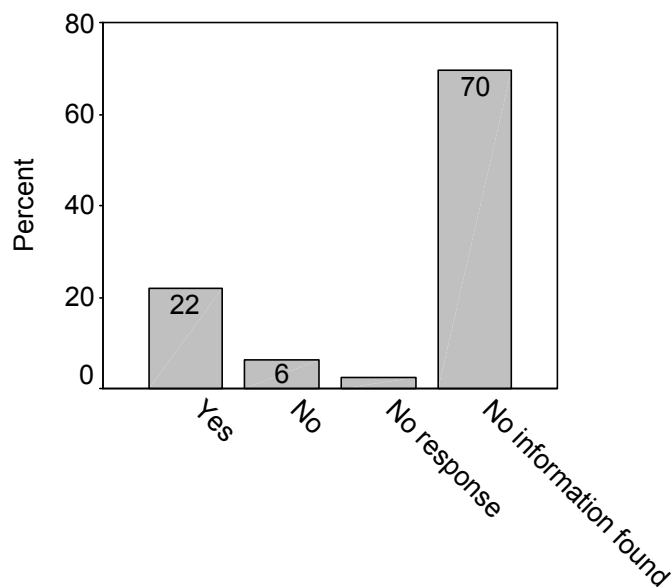


Figure 24: Was the information enough?

	Frequency	Percent
Yes	3	1.4
No	58	26.4
No response	6	2.7
Total	67	30.5
No information found about cyclones during trip	153	69.5
Total	220	100.0

Table 25: Searched for more information about cyclones

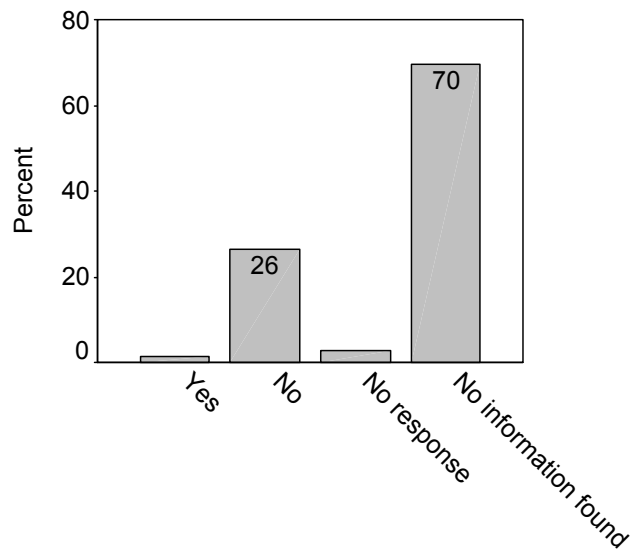


Figure 25: Searched for more information about cyclones

The respondents could give one or two answers to the question where they would search for the most up to date information about cyclones. The most frequent answer was the Internet (61.0%), followed by TV (11.0%) and travel agencies (7.6%). Other backpackers would use newspapers (4.9%) or the library (4.1%) for the most up to date information about tropical cyclones, as shown in table 26. Two responses were recorded from each respondent.

	Frequency	Percent of all responses	Percent of actual responses
Internet	161	36.6	61.0
TV	29	6.6	11.0
Travel agencies	20	4.5	7.6
News(papers)	13	3.0	4.9
Library	11	2.5	4.1
No response	6	1.4	2.3
Local residents	5	1.1	1.9
Don't know	4	.9	1.5
Radio	3	.7	1.1
Word of mouth	3	.7	1.1
Other	3	.7	1.1
Accommodation providers	2	.5	.8
Other travellers	2	.5	.8
Guidebook	2	.5	.8
Total	264	60.0	100.0
No 2nd answer given	176	40.0	
Total	440	100.0	

Table 26: Source of up to date cyclone information

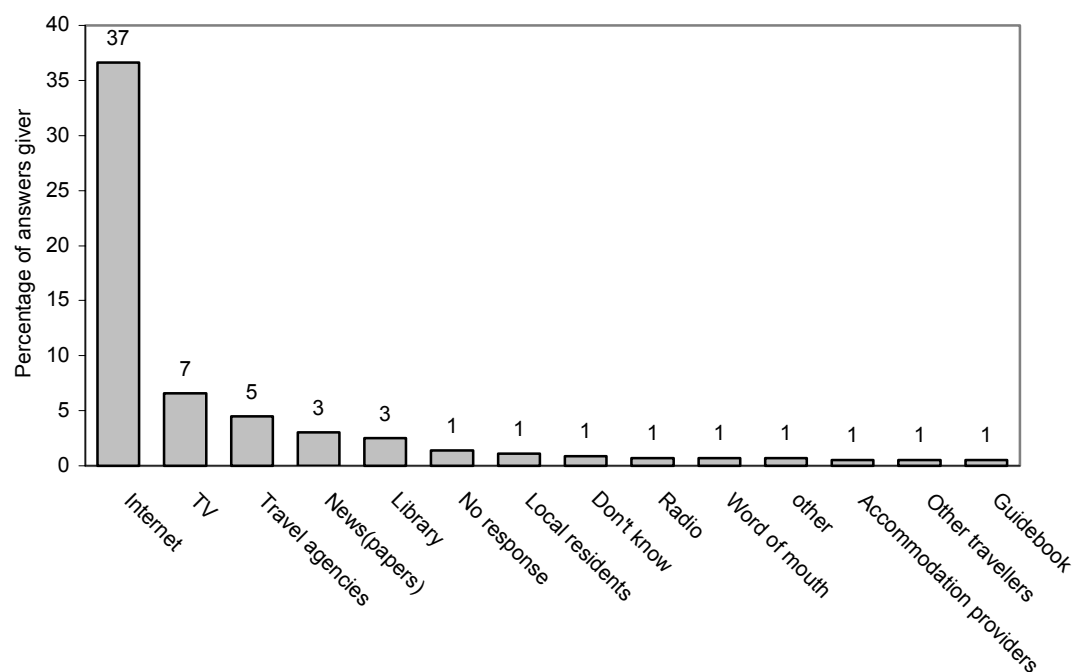


Figure 26: Source of up to date cyclone information

According to the majority of the backpackers (50.9%) there was no cyclone safety information available in their accommodation in Cairns, and 47.7% did not know whether this information was available or not, see table 27. In total 2 backpackers found information about cyclones, of whom one read the information provided in a brochure, and found its usefulness moderate.

	Frequency	Percent
Yes	2	.9
No	112	50.9
No response	1	.5
Don't know	105	47.7
Total	220	100.0

Table 27: Cyclone safety information at accommodation

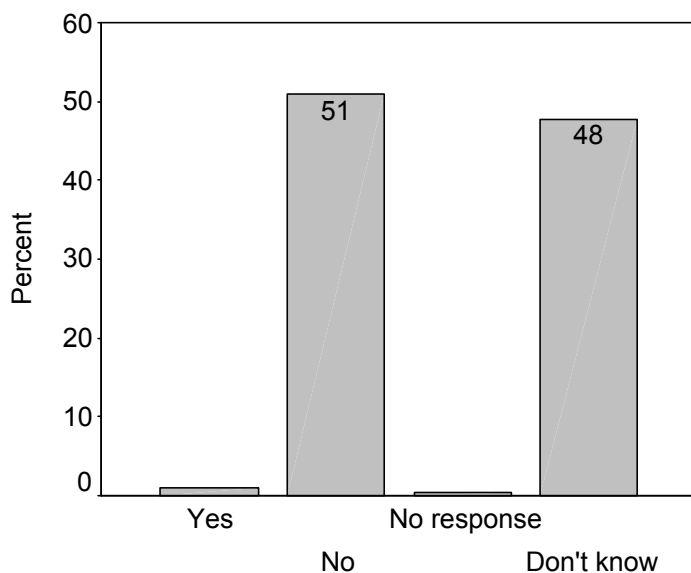


Figure 27: Cyclone safety information at accommodation

The cyclone season in Cairns is from November till April, during the Wet Season. Approximately half of the backpackers gave either the right answer (23.2%), or a partially correct answer (23.2%) to the question when is the cyclone season in Cairns. On the other hand, more than 40% of them did not know when the cyclone season is and 10.9% gave an incorrect answer, according to table 28. The response underscores a fundamental lack of awareness of the cyclone hazard.

	Frequency	Percent
Correct	51	23.2
Partially correct	55	25.0
Incorrect	24	10.9
Don't know	90	40.9
Total	220	100.0

Table 28: Cyclone season

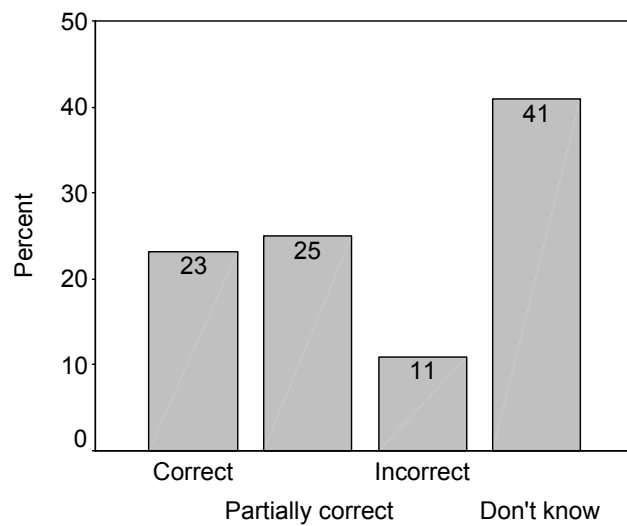


Figure 28: Cyclone season

The destructiveness of cyclones is divided up in 5 categories where category 1 is the least and category 5 is the most destructive cyclone. The backpackers were asked which category they believed is the most destructive cyclone. More than half of the backpackers were correct, but 25.9 percent of the respondents did not know what category is a more destructive cyclone and 17.3 percent gave an incorrect answer, according to table 29.

	Frequency	Percent
Category 1	57	25.9
Category 5	125	56.8
Don't know	38	17.3
Total	220	100.0

Table 29: More destructive cyclone

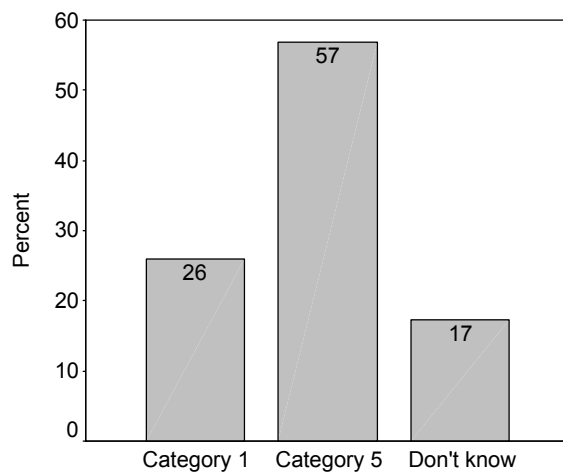


Figure 29: More destructive cyclone

A storm surge is a raised dome of seawater caused by a cyclone, which could inundate the coastal area. The description of a storm surge of the respondents created a clear view of the knowledge of backpackers about this phenomenon, as 73.6% did not know what a storm surge is and 19.1% gave an incorrect answer, see table 30. Virtually all of the backpackers interviewed in this survey were staying within the most vulnerable storm surge zones at the time. In the event of a severe cyclone these regions would need to be evacuated.

	Frequency	Percent
Correct	12	5.5
Partially correct	4	1.8
Incorrect	42	19.1
Don't know	162	73.6
Total	220	100.0

Table 30: Description of a storm surge

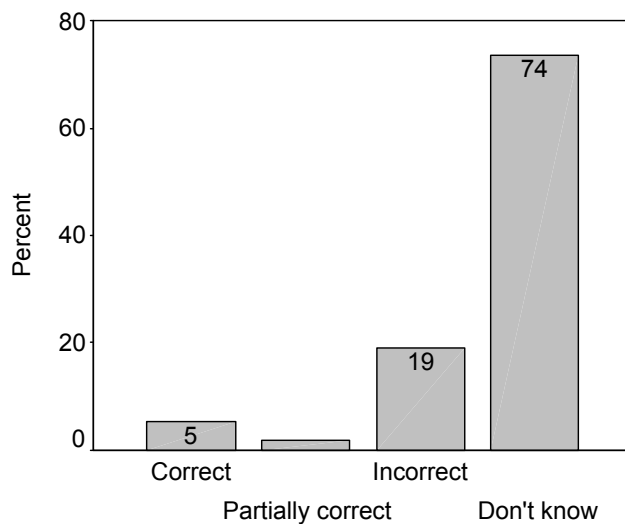


Figure 30: Description of a storm surge

4.1.5 Attitude and concern about cyclones

The preparedness of accommodation on tropical cyclones only had an impact on a minority of the respondents. Only 22.7% of the backpackers stated that the preparedness of an accommodation provider would influence their choice of accommodation, as shown in table 31.

	Frequency	Percent
Yes	50	22.7
No	164	74.5
Don't know	6	2.7
Total	220	100.0

Table 31: Influence of cyclone preparedness on choice of accommodation

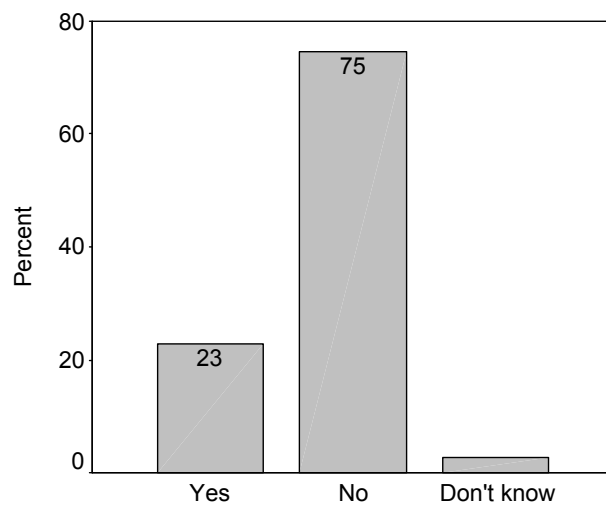


Figure 31: Influence of cyclone preparedness on choice of accommodation

Table 32 shows that only 1 respondent has planned his or her trip to Cairns with the cyclone season in mind.

	Frequency	Percent
Yes	1	.5
No	219	99.5
Total	220	100.0

Table 32: Planned trip with cyclone season in mind

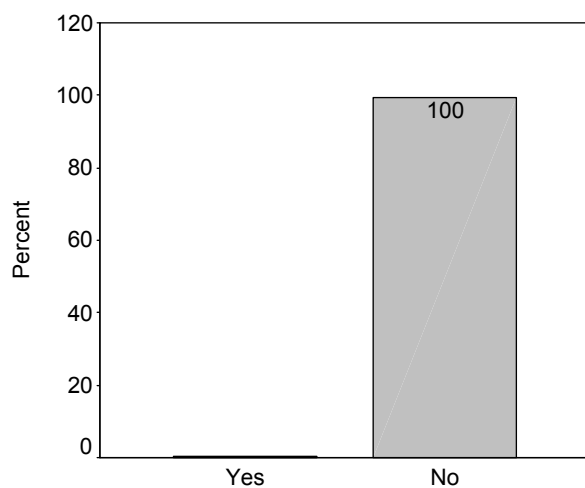


Figure 32: Planned trip with cyclone season in mind

The attitude of the people in case of a cyclone was varied. The biggest part of the respondents (41.4%) would seek information what to do first, almost one-third (29.5%) would evacuate, 17.7% of the backpackers would look for a shelter place and 8.2% would stay at their current location. Only 2.3% had no idea what to do and a two of the respondents (0.9%) would call the emergency services as showed in table 33.

	Frequency	Percent
Seek information	91	41.4
Evacuate	65	29.5
Shelter	39	17.7
Stay	18	8.2
Don't know	5	2.3
Call emergency services	2	.9
Total	220	100.0

Table 33: What to do in case of a cyclone

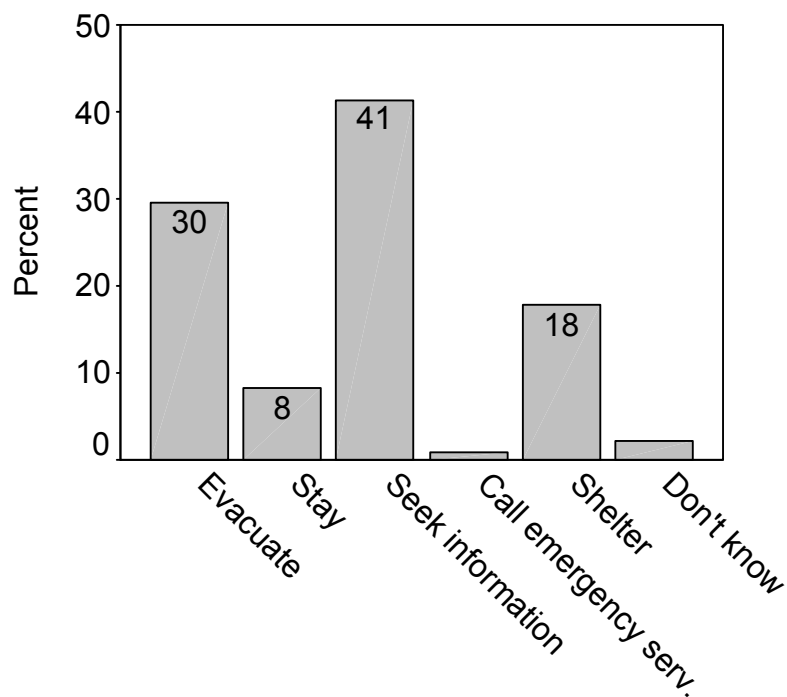


Figure 33: What to do in case of a cyclone

Opinions about the threat of cyclones differed widely. The most frequently given answer was that respondents had no idea what the threat of cyclones is in Cairns (25.4%). Apart from this answer the most common response was that a cyclone could cause severe damage (15.8%) or severe building damage (13.6%). Other kinds of damage were vegetation damage (9.3%), water/electricity failure (3.1%) and infrastructure damage (1.7%). Some (4.5%) of the backpackers thought that a cyclone could cause victims. The majority of the answers concerning the frequency of cyclones stated that cyclones are a rare occurrence in Cairns. Two percent of the answers was that the threat of cyclones depends on the category, and a small part of the answers (0.6%) was that a cyclone couldn't cause any damage, as described in table 34.

	Frequency	Percent of all responses	Percent of actual responses
Don't know	90 (45)	20.5	25.4
Severe damage	56	12.7	15.8
Severe building damage	48	10.9	13.6
Little damage	33	7.5	9.3
Vegetation damage	33	7.5	9.3
Rare occurrence	23	5.2	6.5
Little building damage	22	5.0	6.2
Victims	16	3.6	4.5
Water/electricity failure	11	2.5	3.1
Depends on category	7	1.6	2.0
Infrastructure damage	6	1.4	1.7
Happens often	4	.9	1.1
Regular occurrence	3	.7	.8
No damage	2	.5	.6
Total	354	80.5	100.0
No 2 nd answer given	86	19.5	
Total	440	100.0	

Table 34: Threat of cyclones

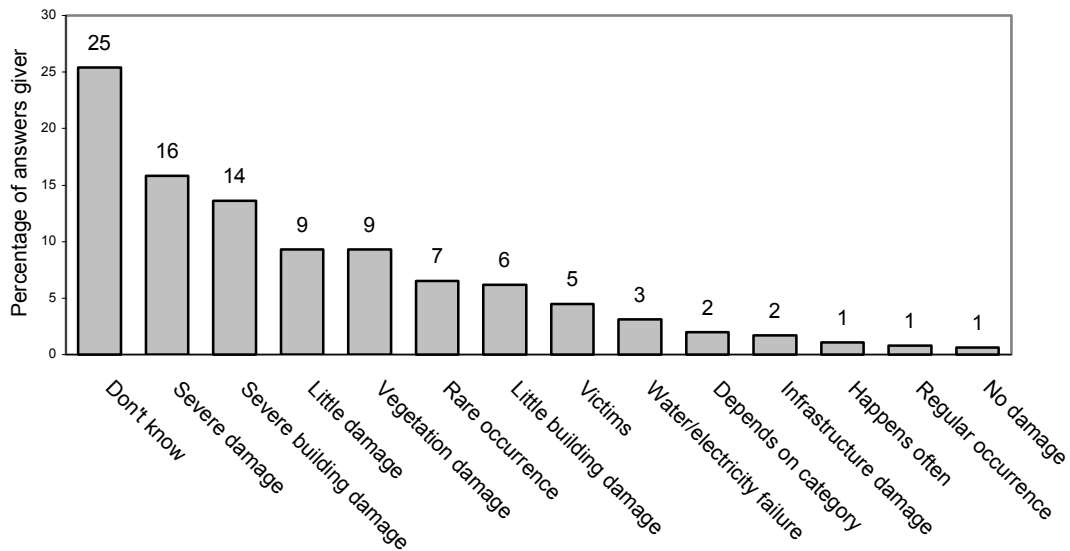


Figure 34: Threat of cyclones

Beside Australia, cyclones can also exist in other countries and locations. Questions were asked if backpackers have ever lived in a cyclone prone area or travelled in a cyclone prone area before. A few backpackers (5.9%) have lived in a cyclone prone area before they came to Australia as shown in table 35. Nearly a third of the respondents (30.5%) had travelled to a cyclone prone area before, as shown in table 36.

	Frequency	Percent
Yes	13	5.9
No	207	94.1
Total	220	100.0

Table 35: Lived in a cyclone prone area

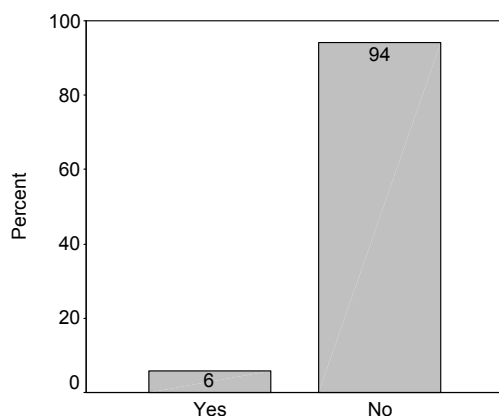


Figure 35: Lived in a cyclone prone area

	Frequency	Percent
Yes	67	30.5
No	151	68.6
Don't know	2	.9
Total	220	100.0

Table 36: Travelled in a cyclone prone area

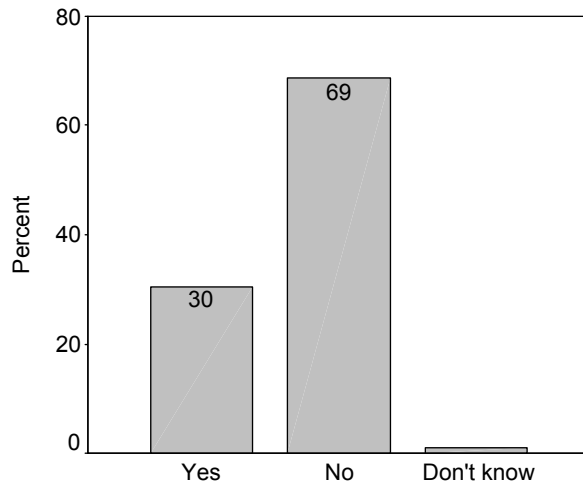


Figure 36: Travelled in a cyclone prone area

4.1.6 Use of Internet

Several questions were asked to create understanding about the way backpackers use the Internet during their trip. Some of the questions could be answered with one or two answers.

The Internet was very popular amongst most of the backpackers with 96.4% of them having used the Internet during their trip though in Australia, as shown in table 37. Most of the backpackers (39.2%) spent between 1 and 2 hours per week on the Internet, according to table 38.

	Frequency	Percent
Yes	212	96.4
No	8	3.6
Total	220	100.0

Table 37: Internet use during trip

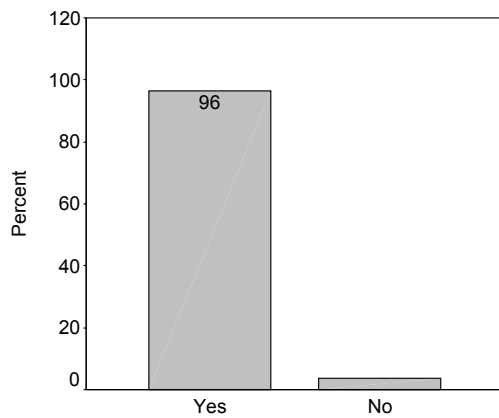


Figure 37: Internet use during trip

	Frequency	Percent
< 1 hour	50	22.7
1 - 2 hours	82	37.3
2 - 3 hours	34	15.5
3 - 4 hours	20	9.1
> 4 hours	25	11.4
No response	1	0.4
Total	211	96.3
No internet use during trip	8	3.7
Total	220	100.0

Table 38: Time spent on the Internet in a week

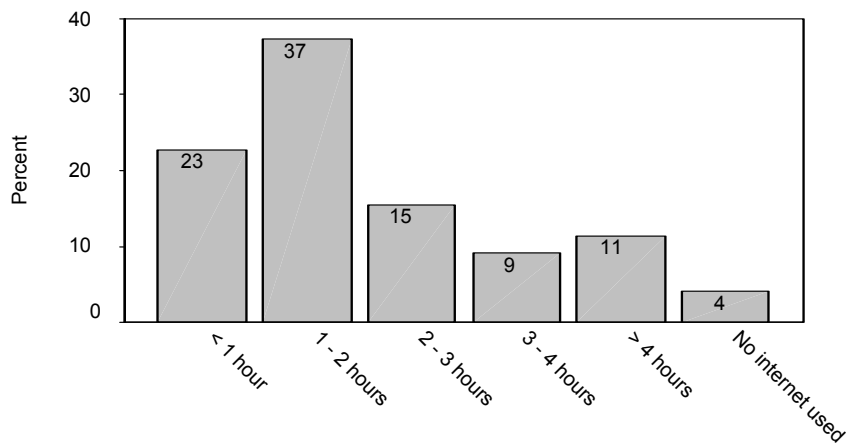


Figure 38: Time spent on the Internet in a week

According to table 39 most of the backpackers use the Internet at Internet cafés (54% of the answers) or their accommodation (42.2% of the answers). Some of the respondents accessed the Internet either at locals' places (2.9%) or on laptops (0.3%).

	Frequency	Percent of all responses	Percent of actual responses
Internet cafe	170	38.6	54.0
Accommodation provider	133	30.2	42.2
Laptop	1	.2	.3
Locals	9	2.0	2.9
No response	2	.5	.6
Total	315	71.6	100.0
No 2 nd answer given	109	24.8	
No Internet used	16 (8)	3.6	
Total	440	100.0	

Table 39: Place of use of the Internet

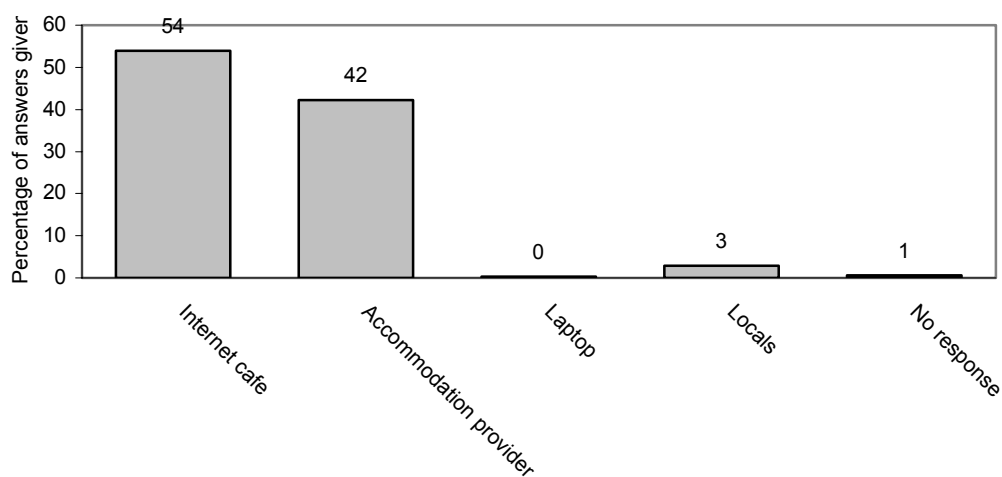


Figure 39: Place of use of the Internet

Most of the backpackers (68.4% of the answers) used the Internet for emailing. Looking for news was the second most given answer (15%), followed by planning of the trip (13%). As these responses include a number of multiple answers it can be assumed that many people are doing more than one activity once they log on, although this is probably in combination with email use. Clearly though, as email is such a dominant use there is a likelihood that most backpackers are not using Internet access for other information. We cannot assume that a backpackers logging on to use email is going to be in a position to receive any other kind of information.

	Frequency	Percent of all responses	Percent of actual responses
E-mail	210	47.7	68.4
News	46	10.5	15.0
Planning trip	40	9.1	13.0
Chat lines	1	.2	.3
Sport	8	1.8	2.6
No response	2	.5	.7
Total	307	69.8	100.0
No 2 nd answer	117	26.6	
No Internet used	16 (8)	3.6	
Total	440	100.0	

Table 40: What backpackers use the Internet for

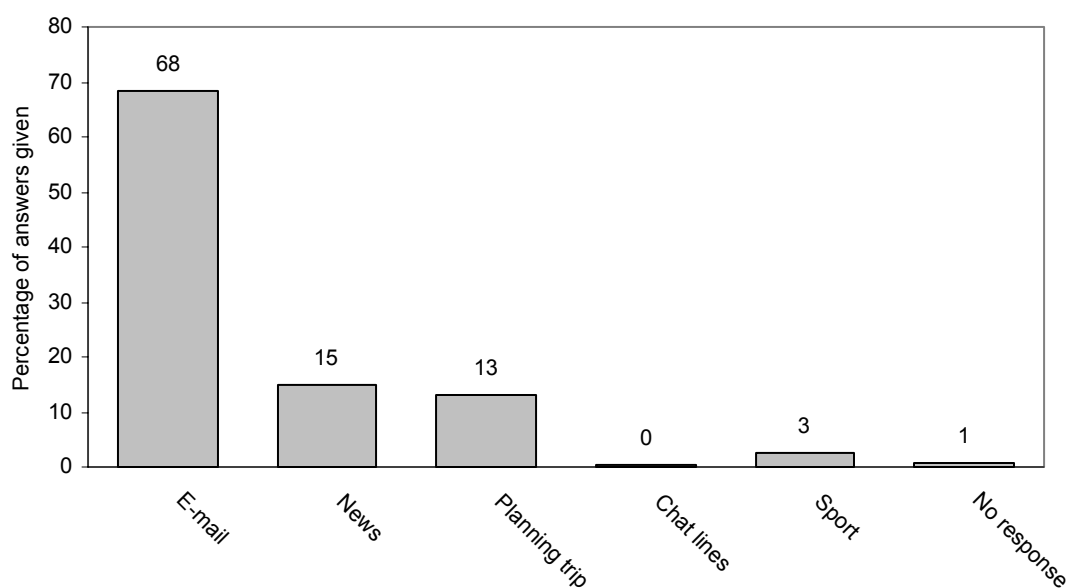


Figure 40: What backpackers use the Internet for

The respondents who used the Internet were asked if they had visited one of the prescribed Internet sites or group of sites with regard to Australia. Almost three-quarters of the backpackers had not visited one of the websites and only 16.0% of the backpackers had visited a governmental website. The Tourism Queensland website was visited by 5.2% of the backpackers and 1.4% had visited an industrial website, as indicated in table 41.

	Frequency	Percent
No	163	74.1
Other governmental	34	15.5
TQW	11	5.0
Other industrial	3	1.4
No response	1	.5
Total	212	96.4
No internet use during trip	8	3.6
Total	220	100.0

Table 41: Visited tourism websites

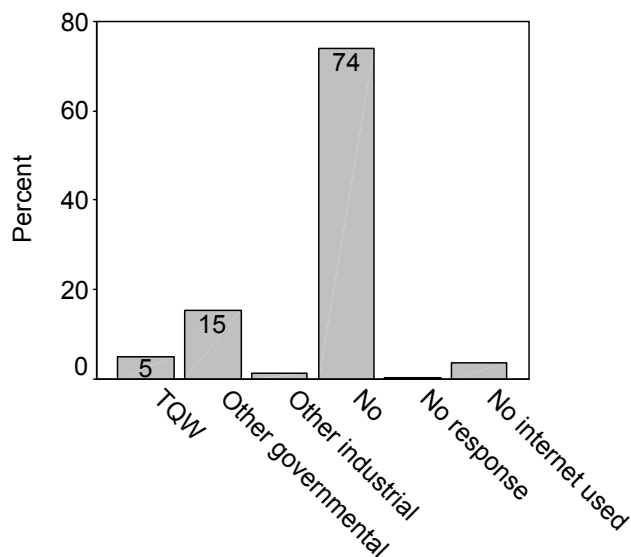


Figure 41: Visited tourism websites

4.2. Accommodation providers

4.2.1 Accommodation provider characteristics

The following questions were asked to get an indication about general characteristics of the accommodation providers: the number of beds of the facility and the occupancy rate during the cyclone season.

Three accommodations had between 40 and 69 beds, and three had between 120 and 200 beds. One accommodation was smaller: it had between 1 and 39 beds. The results are showed in table 42.

	Frequency	Percent
1-39	1	12.5
40-69	3	37.5
120-200	3	37.5
No response	1	12.5
Total	8	100.0

Table 42: Number of Beds

Three of the accommodation locations had an occupancy rate of less then 50% during the cyclone season, and three others between 50 and 75%. Only one of the providers had an accommodation rate between 76 and 100%.

	Frequency	Percent
<50%	3	37.5
51-75%	3	37.5
76-100%	1	12.5
No response	1	12.5
Total	8	100.0

Table 43: Occupancy rate

4.2.2 Concern about cyclones

To determine the concern about cyclones amongst accommodation providers, questions were asked about the effect of a cyclone on the accommodation, and the level of cyclone risk for the accommodation.

Accommodation providers could give one or two answers to the question on what way they thought a cyclone would affect their facility. The most frequently given answers were storm surge (4) and damage from flying debris (4), followed by severe winds (3) and power failure (1). One of the accommodation providers meant that a cyclone would not affect the facility.

	Frequency	Percent
Storm surge	4	25.0
Severe winds	3	18.8
Damage from flying debris	4	25.0
Power failure	1	6.3
Wouldn't	1	6.3
Other	1	6.3
No second answer given	2	12.5
Total answers given	16	100.0

Table 44: Damage at facility

Half of the accommodation providers (4) had the opinion that cyclones posed little risk to their properties, whereas the other providers thought that a cyclone meant no risk to a significant risk, as shown in table 45. The low end of the risk scale dominates.

	Frequency	Percent
No risk	1	12.5
Little risk	4	50.0
Average risk	1	12.5
Quite significant risk	1	12.5
Significant risk	1	12.5
Total	8	100.0

Table 45: Property damage

Concerning personal safety, most of the providers (3) considered there was little risk, and two accommodation providers thought there is not any risk. Two other providers had the opinion a cyclone could cause average risk to personal safety. See table 46.

	Frequency	Percent
No risk	2	25.0
Little risk	3	37.5
Average risk	2	25.0
Significant risk	1	12.5
Total	8	100.0

Table 46: Personal safety

Four accommodation providers had the opinion that cyclones meant little financial risk while two other providers thought there was a significant financial risk, according to table 47.

	Frequency	Percent
No risk	1	12.5
Little risk	4	50.0
Quite significant risk	1	12.5
Significant risk	2	25.0
Total	8	100.0

Table 47: Financial risk

Cyclone-related negative publicity could cause damage to the tourist industry because of a decreasing number of tourists visiting the area. Three accommodation providers stated this risk was significant, whereas four thought there was no or little risk, as described in table 48.

	Frequency	Percent
No risk	2	25.0
Little risk	2	25.0
Quite significant risk	1	12.5
Significant risk	3	37.5
Total	8	100.0

Table 48: Worse reputation

4.2.3 Cyclone information provided by accommodation providers

To get an overview about the cyclone information provided by accommodation providers question were asked about cyclone information that is available for guests at the accommodation, how often visitors asked for it, and in what form cyclone information most valuable is for the visitors according to the accommodation providers.

Four of the accommodation providers used pamphlets as the cyclone information mode for visitors and two of them also supplied brochures. The staff of one of the accommodation locations provided cyclone information to the tourists, and three hostels did not provide any information about tropical cyclones, as shown in table 49. Two of the accommodation providers provided the cyclone information in English and Japanese and one of them provided the information in the English language only, see table 50.

	Frequency	Percent
Pamphlets	2	25.0
Other	1	12.5
All	2	25.0
Nothing	3	37.5
Total	8	100.0

Table 49: Cyclone information available

	Frequency	Percent
No response / no information	5	62.5
Eng/Jap	2	25.0
English	1	12.5
Total	8	100.0

Table 50: Languages of cyclone information

Each of the accommodation providers stated that visitors seldom asked for information about tropical cyclones.

Most of the accommodation providers (6) felt that the best mode of providing information about cyclones to visitors was on the Internet in the form of a website, whereas two others thought it should be pamphlets as shown in table 51.

	Frequency	Percent
Pamphlets	2	25.0
Internet site	6	75.0
Total	8	100.0

Table 51: Most useful cyclone information for visitors

4.2.4 Preparedness of accommodation providers for cyclones

To determine the preparedness of accommodation providers for cyclones they were asked where they gather cyclone information during the cyclone season and what kind of an emergency plan the facilities had.

Three accommodation providers gathered the information about cyclones during the cyclone season from the television and three others used the weather fax of the Bureau of Meteorology. One of the respondents used the Internet for the most up to date information about cyclones and another provider used all available sources as shown in table 52.

	Frequency	Percent
Internet	1	12.5
TV	3	37.5
Weather fax	3	37.5
All + BOM	1	12.5
Total	8	100.0

Table 52: Where the management gets their cyclone information

Six of the providers had an emergency safety plan, and two didn't. See table 53.

	Frequency	Percent
Yes	6	75.0
No	2	25.0
Total	8	100.0

Table 53: Does the facility have an emergency safety plan

Accommodation providers could give more than one answer to the question what kind of emergency plan there was available at their facility. Two of the respondents did not have any kind of an emergency plan. The other facilities had at least an emergency manager; two of them had a night key or an evacuation plan, as shown in table 54.

	Frequency	Percent
Night key	1	10.0
Emergency manager	6	60.0
No cyclone emergency plan	2	20.0
Evacuation plan	1	10.0
Total answers given	10	100.0

Table 54: What kind of an emergency plan is available at the facility

Only half of the respondents were willing to have cyclone information at their facility, as shown in table 55.

	Frequency	Percent
Yes	4	50.0
No	3	37.5
No response	1	12.5
Total	8	100.0

Table 55: Willing to have cyclone information at facility

5. Current information about tropical cyclones

5.1 Lonely Planet

More than 60% of the backpackers are using the Lonely Planet during their trip through Australia, according to the results of this project. The Lonely Planet covers two examples of cyclones, cyclone Tracy in Darwin and cyclone Vance in Exmouth. The part about cyclone Tracy that hit Darwin on Christmas Eve 1974 is only information about the devastation the cyclone caused. The description of cyclone Vance that hit Exmouth is also about the devastation and rehabilitation.

Within the description of the climate of Queensland a comment is made about the possibility of cyclones and ensuing floods in Cairns from January till March, which can block the Bruce Highway. The description of the climate in Western Australia contains a description of the monsoon development from January onwards, followed by the occasional tropical cyclone.

Although tropical cyclones are mentioned multiple times in the Lonely Planet, there is no separate paragraph that supplies backpackers with more in-depth information about this phenomenon, or what is appropriate behaviour during its passage.

5.2 Brochures & magazines

The Bureau of Meteorology (BOM) in cooperation with Emergency Management Australia has produced a couple of information folders about cyclones. These brochures gave background information about tropical cyclones, the physical hazards of it and preparedness and safety procedures. Cairns City Council has produced similar brochures. The Department of Emergency Services provides some brochures in regards to storm surges and the standard emergency warning signal. Also the energy supplier Ergon Energy has produced a cyclone safety brochure.

TNT Magazine is a magazine specially designed for backpackers and tourists, which has a special chapter about safety and emergency essentials. However, there was no information about the risk of cyclones in that magazine. It is probably reasonable to state that adequate brochures and pamphlets have been produced, but the survey suggests there may not be enough, and that they are not sufficiently widely available. (Editors note: I have stayed in an extensive range of hostel, hotel, caravan park and unit accommodation in Cairns over the last 13 years, and have only encountered cyclone information in 2 caravan parks at the reception desk.)

5.3 Cairns Airport

The airport doesn't provide any information about tropical cyclones for tourists. During a meeting with the commercial airport manager of the Cairns Port Authority Mr Jeff Broomfield mentioned that he was willing to place brochures and pamphlets in the terminals, if governmental departments would provide them. This suggests a wider problem. He, like many accommodation providers is clearly willing to make information available, but he is not going to seek it out. The assumption we can make is that if someone brings information to the location, management will make it available. While we may desire to tourist operators to take responsibility for emergency education, it seems most likely that their co-operation will remain passive and that emergency managers, council etc. will have to take the active role of bringing information to them.

6. Discussion

6.1 Backpackers

Backpacker characteristics

The gender of the respondents was almost equal which corresponds with the earlier CDS report (2001). The majority of the participants were between 20 and 25 years old and most of the respondents have attained education at university or high school. The respondents in the 2001 CDS report were young, well-educated people, similar to the respondents of this study.

Most of the backpackers originated from the United Kingdom and the rest of Europe; together they covered more than 85% of the respondents. Almost three-quarters of the backpackers considered their competency level of English fluent, which is partially caused by the fact that many backpackers had English as their first language. More than 90% of the backpackers who didn't have English as first language considered their competency level as adequate to fluent. If respondents consider their competency level of English adequate or higher, they should be able to understand cyclone safety information and cyclone warnings. As a result it can be concluded that more than 97% of the backpackers could understand cyclone safety information and cyclone warnings.

Under a third of the backpackers are members of the Youth Hostel Association (YHA). However, this is sufficiently significant to warrant targeting that organisation.

Style of travelling

For the majority of the respondents the main purpose to visit Australia was holiday, followed by a combination of working and holiday. As people on holiday are in a pleasure-seeking mood, they tend to ignore the risk, and show a low level of natural disaster awareness (Murphy & Barley, 1989).

Some backpackers were travelling alone, but most were in a small informal group. Less than 1% of the backpackers were travelling in an organized group, where tour guides mainly provide information for the trip. Backpackers have to search for information about their trip themselves, because the majority of backpackers travel alone or in a small informal group.

Whereas the CDS report (2001) stated that backpackers use a broad range of transport, this study indicates that backpackers travel mainly by bus. Nevertheless car and plane are also popular means of transport, but significantly less popular than the bus. The phrasing of the questions causes this difference. The question concerning the means of transport used while travelling through Australia phrased in the CDS report (2001) was focussed on all the different means of transport, whereas this study only focuses on the main kind of transport used. Resulting from this it can be concluded that backpackers mainly use the bus to travel through Australia amongst other means of transport.

The length of stay in Australia of backpackers was varied. The majority of them stayed between 2 weeks and 4 months in Australia, whereas the previous study showed this were slightly more than one third of the respondents. In the previous study almost 40% of backpackers stayed between 10 and 12 months in Australia whilst the outcome of this study is only 15% of the respondents¹. This indicates that backpackers are either returning to their home country sooner, or they spend more time in other countries during their trip.

The study found that the length of stay in Cairns of most of the backpackers was between 1 and 14 days. The CDS report (2001) indicates a similar result. However, more people leave within 3 days and less people within the period of 4 to 7 days. After their visit to Cairns, most of the backpackers continued their trip through Queensland, or had as their next destination the Northern Territory.

Sources of information

The majority of the backpackers searched for information about Australia before they started their trip. The kind of information backpackers searched for before they started their trip was varied, but the three main subjects were places of interest, accommodation and trips. The respondents used different information sources to gather this information; the main part of the answers was guidebooks, followed by the Internet. The guidebooks were the most popular source of information of backpackers before and during their trip. The Lonely Planet was used by more than half of the backpackers. The Internet was used as an information source rather before than during the trip. Word of mouth and information agents were more important sources of information during the trip of backpackers.

¹ These figures differ from the results presented in the discussion of the previous study (page 51), because of a misinterpretation of table 4.2.3. of the CDS report (2001).

General knowledge and awareness of cyclones

Hardly any of the backpackers had stated they ever lived in an area where a cyclone could occur, and only a third of them have ever travelled to a cyclone prone area. Therefore the general knowledge of cyclones amongst backpackers is expected to be low with regards to previous experience.

Almost three-quarters of the backpackers were aware that some parts of Australia are affected by tropical cyclones, and more than half of the respondents also knew or had a general idea which area of Australia is affected by tropical cyclones, which both correspond with the previous study. Even though most of the backpackers were aware that Australia is affected by tropical cyclones, only 30% of the backpackers got information about cyclones during their trip through Australia. An even smaller part of the respondents found information about cyclones before their trip started. As a consequence, it is likely that most of the backpackers had general knowledge about cyclones. The two main sources of cyclone information during the trip of the respondents were word of mouth and the television. The information found about cyclones in Australia was considered moderate to very useful and in general enough. Therefore most of the respondents didn't search for more information about tropical cyclones.

The questions that were asked gave a clear view of the general knowledge about cyclones amongst backpackers. The more specific the knowledge that was required to answer the questions, the fewer respondents gave a correct answer. Almost half of the respondents got at least partially correct when the cyclone season occurs in Cairns, which is nearly the same as the result of the previous study. Also the results of the question of what is a more destructive cyclone, category 1 or 5, provide a corresponding picture with the previous study, as half of the respondent's answers were correct and the other half is almost evenly divided between an incorrect answer and do not know. In comparison to the previous study, fewer participants were able to provide at least a partially correct description of a storm surge, and also the majority of the backpackers did not know what a storm surge is.

Whereas the previous study indicates that backpackers were likely to go to local residents to get the most up to date information about cyclones, this study indicates that the majority of the participants would consult the Internet for this information. The Cairns community demonstrated a low perception of risk towards cyclone hazards

(Berry, 1996). The fact that more backpackers would consult the Internet instead of local residents to gather the most up to date information about cyclones is therefore a good development. Almost all of the respondents either didn't know if there was cyclone safety information available at their accommodation or said this information wasn't available at their accommodation.

As a result to this consideration, the general knowledge and awareness about cyclones amongst backpackers is not significantly different either within or outside of the cyclone season.

Attitude and concern about cyclones

A fairly small part of the respondents stated that the preparedness of accommodation on tropical cyclones had influenced their choice of accommodation. There is no significant difference between the previous study out of the cyclone season and this study, within the cyclone season. This is an interesting result as approximately 20% of the respondents of the previous study stated that the preparedness of accommodation providers for cyclones would only influence their choice of accommodation in the cyclone season. As half of the respondents in this study were aware that the cyclone season was at the moment of interviewing, this should have resulted in an increase of this figure, according to the previous study. Only one respondent planned his/her trip to Cairns with the cyclone season in mind. This indicates that backpackers are not planning their trip with any consideration of the cyclone season.

When a cyclone is heading for the coast of Cairns, most of the backpackers have got an idea of what to do, whereas there were only a few respondents who did not know what to do. The biggest part of the respondents would ask for information in case of a cyclone. Two other options that backpackers indicated as action in case of a cyclone were evacuate and shelter. Amongst the backpackers there is not one particular idea of what to do if a cyclone is heading for the coast, but all of these three options are plausible.

The overall view of the threat of cyclones amongst backpackers was varied. Apart from the fact that many of the backpackers had no idea about it, most of the respondents answered that a cyclone could cause severe damage or severe building damage. Backpackers that mentioned the frequency of cyclones stated that cyclones are a rare occurrence in Cairns.

Use of the Internet

One of the main aims of the project was to determine how and where backpackers acquire information about the tropical cyclone risk. Therefore they were asked questions about the use of the Internet. It turned out that more than 95% of the backpackers used the Internet during their trip.

The majority of the backpackers spent less than three hours a week on the Internet, and the two most popular places to use the Internet were accommodation and Internet cafes. The respondents used the Internet mainly for mailing, whereas other purposes were planning the trip and checking for news. It is interesting that amongst backpackers the Internet was used for communication rather than as a source of information. The respondents was asked if they had visited one of the following Internet sites: Tourism Queensland website, Cairns City Council website, other governmental websites or other industrial websites. More than three-quarters of the respondents had not visited one of these websites. Some backpackers visited a government website, and an even smaller group had looked at the Tourism Queensland website.

6.2 Accommodation providers

Only a small sample of accommodation providers provided information, so that the findings are indicators rather than being representative of the whole group. The main part of the accommodation had between 40 and 200 beds. The occupancy rate during the previous study outside of the cyclone season was higher in comparison to this study. The CDS report (2001) stated that this difference is likely to be caused by the higher rainfall and temperatures, which discourage people from visiting the area.

Most of the accommodation providers thought that a cyclone could cause damage to their properties and personal safety. The three most likely categories of damage to their facilities in case of a cyclone were storm surge, severe winds and damage from flying debris. Of the four categories of risk caused by a cyclone that were stated in the questionnaire, the damage done by a damaged reputation of the area was considered the most significant, followed by financial risk.

Remarkable was that visitors of all the accommodation seldom asked for information about cyclones to the providers. The majority of the accommodation providers used the conventional information modes to inform their guests, like pamphlets and brochures. On the question of what languages this information is provided in, most of the

respondents did not answer. The CDS report (2001) showed that 83% of the provided information is only available in English. Only half of the respondents stated that they are willing to provide the visitors with cyclone information pamphlets, whereas this was 90% in the CDS report. Most of the providers thought that an Internet-site is the best mode to provide information about cyclones to backpackers.

Two of the accommodation providers used the Internet to get information about cyclones during the cyclone season, while the others used television and the weather fax of the Bureau of Meteorology.

Most of the providers had an emergency safety plan, all consisting at least of an emergency manager. The CDS report indicates that the accommodation providers had more precautions, like a means of securing business records and emergency supplies of water and food.

7. Conclusion

The awareness of the existence of tropical cyclones was high amongst the backpackers, as most of them did know Australia could be affected by cyclones and that they could cause severe damage. However, the general knowledge about cyclones was low. In spite of the high general awareness, the behaviour of the backpackers was not influenced with regards to the dangers of cyclones. For example, the cyclone safety preparedness of their accommodation only influenced a small number of the respondents. The opinions about how to act in case of a cyclone were varied, but all of them were plausible. Almost every backpacker had an idea what to do in the case of an emergency. In comparison with the previous study, there was no significant difference during and outside of the cyclone season.

The biggest part of the backpackers travelled in small informal groups, and the most used kind of transport was the bus. Therefore they have to gather the information about the trip by themselves.

The most popular information sources before and during the trip were the guidebooks. Before the backpackers went to Australia, they also used the Internet often as an information source. The respondents did not find much information about cyclones before and during their staying in Australia.

Most of the backpackers used the Internet during their staying in Australia. The main purpose of using the Internet were emailing and looking for news. They had not used the Internet for information about cyclones. On the other hand, nearly every respondent would search for the most up to date cyclone information on the Internet.

According to the backpackers, there was no information about cyclones available at the accommodation. However, the accommodation providers were aware about tropical cyclones and the dangers. Visitors seldom asked for information about cyclones to the providers. The providers thought that the Internet was the most useful mode of providing information about cyclones to backpackers. At half of the accommodation providers no information was available to visitors about cyclones. However, only half of the respondents were willing to provide information to visitors. Most of the providers had an emergency plan with regards to cyclone safety, but remarkable was that some respondents did not know the content of those plans.

The Lonely Planet contained information about cyclones, but this information was only about facts of some cyclones that hit Australia in the past. This guidebook did not contain any cyclone safety information. Some governmental departments and Cairns City Council provided cyclone brochures with clear safety information; however, the distribution of those brochures is inadequate.

As a result of the fact that backpackers had a low initiative of gathering cyclone related information, the government and accommodation providers are responsible for the information transfer.

8. Recommendations

Cyclone information should be provided in a visually attractive and easy-reference mode specially directed to backpackers, because they were not interested in complex detailed cyclone information. A pamphlet could cover the most important topics about cyclones in a distinct manner. The interests and behaviour of the backpackers has to be taken into consideration at the design of specific cyclone information.

According to the accommodation providers the Internet was the best way to provide information about cyclones, and was also mentioned by the backpackers as the best information source to look for the most up to date information. However, the backpackers must become aware of the Internet sites about cyclone information. They could be referred to those specific Internet sites through pamphlets and brochures.

Because the respondents often used guidebooks, a chapter with cyclone information can be implemented in the guidebooks to improve the knowledge of cyclones. There is also an opportunity to implement this approach in backpacker-designed magazines, like the TNT Magazine.

There are many brochures with cyclone information produced by government departments, but the information transfer to backpackers has to be improved, because they have a low initiative of gathering cyclone related information. The accommodation locations are the places most visited by backpackers; therefore it is important that the providers supply information brochures and pamphlets to visitors. Because not all the accommodation providers were willing to provide information, the possibility of enforcing prescriptions by the government could be investigated. Other recommended locations to provide information to tourists are the airport, shopping malls and buses.

Not all the staff of the accommodation had knowledge of the emergency safety plans; nevertheless it is important that all the employees understand these plans. In case of a cyclone it is important the staff is fully aware of the safety procedures. It is useful if the management obliged its staff to take valid notice of the safety plan and follow training in safety procedures.

In addition, the following areas are proposed to conduct further research:

- The way the Internet can be used to inform backpackers about tropical cyclone precautions
- The way travel agencies can be used to inform backpackers about tropical cyclone precautions
- The way tourism publications can be used to inform backpackers about tropical cyclone precautions
- Compare the way Australia copes with vulnerable tourist communities within cyclone prone areas and the way other countries with cyclone prone areas cope with this aspect of tourism.

As a final recommendation, it is suggested that the above recommendations form the basis of a detailed proposal to Cairns City Council and Emergency Management Australia to jointly fund a project to address these issues before the next cyclone season.

9. References

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10. Appendices

Appendix 1: Questionnaire Backpackers



CENTRE FOR DISASTER STUDIES
SCHOOL OF TROPICAL ENVIRONMENT STUDIES AND GEOGRAPHY
PO Box 6811 Cairns QLD 4870
Telephone: (07) 4042 1215
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Email: Linda.Anderson-Berry@jcu.edu.au
Wouter.Hoogenraad@jcu.edu.au
Ronald.Vaneden@jcu.edu.au

- 1) Where are you from?
- 2) What is your competency level of written English?
- 3) What is your competency level of spoken English?
- 4) What is your age?
- 5) What is the highest level of formal education that you have achieved?
- 6) How long are you staying in Australia?
- 7) Did you search for information about Australia before you started your trip?
 - a) If yes, what kind of information about Australia were you looking for?
 - b) What sources have you looked at for information about Australia?
 - c) Did you find any information about tropical cyclones in Australia?
 - If yes, what kind of specific information have you found about it?
- 8) What is the main purpose of your trip to Australia?
- 9) Are you aware that some parts of Australia are affected by tropical cyclones?
 - a) If yes, what parts of Australia are likely to be affected?
- 10) Where would you search for the most up to date information about cyclones?
- 11) What are your sources of information while travelling through Australia?
 - a) What tourist guidebooks do you use?
- 12) Did you find any information about cyclones while travelling through Australia?
 - a) Where did you find this information?
 - b) How useful was the information?
 - c) Was the information enough?
 - d) If not, did you look for any more information?
- 13) What kind of transport do you mainly use for your trip through Australia?

- 14) Do you travel mostly alone or in a group?
- 15) How long have you been in Cairns already?
- 16) How long will you stay in Cairns?
- 17) Where will you go after you leave Cairns?
- 18) Where are you staying in Cairns?
- 19) Is there any information on cyclone safety available at your accommodation?
 - a) If yes, have you looked at / read this information?
 - b) If yes, how useful is that information?
 - c) In what form was this information provided?
- 20) If you knew that an accommodation was well prepared for cyclones, would that influence your choice of accommodation?
- 21) When is the cyclone season in Cairns?
- 22) Did you plan your trip to Cairns with this in mind?
- 23) Imagine a cyclone was heading straight for Cairns, what would you do?
- 24) Which do you think is a more destructive cyclone?
Category 1 or Category 5
- 25) Can you please explain what a storm surge is?
- 26) Have you ever lived in an area where a cyclone / hurricane / typhoon could occur?
 - a) If yes, Where and have you ever experienced a cyclone / hurricane / typhoon?
- 27) Have you ever travelled to an area where a cyclone / hurricane / typhoon could occur?
 - a) If yes, where and when?
- 28) Do you use the Internet during your trip?
 - a) If yes, where did you use it during your trip?
 - b) How much time do you spend on the Internet in a week?
 - c) What do you use the Internet for during your trip?
 - d) Have you visited one of the following sites:
Tourism Queensland website / CCC / other governmental sites / other industrial sites
- 29) Are you a member of the YHA?
- 30) What do you think the threat of cyclones in Cairns is?

Appendix 2: Questionnaire Accommodation providers



CENTRE FOR DISASTER STUDIES
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 Ronald.Vaneden@jcu.edu.au

1. How many beds do you have in this accommodation facility?
2. What is the average occupancy rate during the cyclone season (November till May) in %?
3. How do you think your facility would be affected if a cyclone crossed the coast at Cairns?
4. How do you rate the cyclone risk in terms of:
 1 = no risk 5 = significant risk

	1	2	3	4	5
Property damage					
Personal safety					
Financial risk					
Damage caused by a worse reputation of the area					

5. How often will visitors of your accommodation request information about cyclones?
6. What cyclone emergency information is available at your facility for visitors?
 - a. And in what languages
7. Would you be willing to have information pamphlets provided in your accommodation facility?
8. What types of information do you think would be most valuable to visitors?
9. Where does the facility management get information about cyclones during the season?
10. Do you have a cyclone emergency safety plan for this accommodation?
 - a. If yes, what kind of plan?

Appendix 3: Approval Letter



CENTRE FOR DISASTER STUDIES
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Wouter.Hoogenraad@jcu.edu.au
Ronald.Vaneden@jcu.edu.au

Hello,

Our names are Ronald Van Eden and Wouter Hoogenraad.

We are assisting the James Cook University Centre for Disaster Studies and the Cairns Local Government Counter Disaster Committee with a study that will determine the awareness and preparedness for tropical cyclones among backpacker tourists in Cairns.

Your responses to the questions in this questionnaire will help us to develop ways of providing more useful information about tropical cyclones to backpackers.

All the information you provide will be kept strictly confidential and no individual names will be used in any reports in this study.

We would very much appreciate it, if you could spend 10-15 minutes to answer about 30 questions. If there are any questions in the survey that you would prefer not to answer just tell us and we will move on to the next question.

If you have any questions or comments about the project or the survey please feel free to contact Linda Anderson-Berry on 4042 1215 or on the above email address.

Thank you very much for your cooperation!

Ronald and Wouter

Ronald Van Eden and Wouter Hoogenraad
James Cook University, Centre for Disaster Studies

Carola Washbourne
Cairns City Council