

RESEARCH PUBLICATION No. 38

Tourist Perceptions of the Great Barrier Reef

F. M. Vanclay



338.479
1943
VAN
1988



Great Barrier Reef Marine Park Authority

RESEARCH PUBLICATION No. 38

Tourist Perceptions of the Great Barrier Reef

F.M. Vanclay

March 1988

*The Library
Great Barrier Reef
Marine Park Authority
P.O. Box 1379
Townsville, 4810*

A REPORT TO THE GREAT BARRIER REEF MARINE PARK AUTHORITY

© Great Barrier Reef Marine Park Authority 1995
ISSN 1037-1508
ISBN 0 642 17422 9
Published June 1995
by the Great Barrier Reef Marine Park Authority

The opinions expressed in this document are not necessarily those of the Great Barrier Reef Marine Park Authority.

National Library of Australia Cataloguing-in-Publication data:

Vanclay, F. M. (Francis M.).
Tourist perceptions of the Great Barrier Reef.

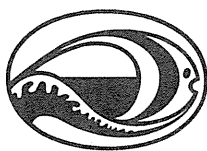
Bibliography.
ISBN 0 642 17422 9.

1. Tourist trade - Queensland - Great Barrier Reef.
2. Travelers - Queensland - Great Barrier Reef - Attitudes.
3. Visitors, Foreign - Queensland - Great Barrier Reef - Attitudes.
4. Recreational surveys - Queensland - Great Barrier Reef. I. Great Barrier Reef Marine Park Authority (Australia). II. Title. (Series : Research publication (Great Barrier Reef Marine Park Authority (Australia)) ; no. 38).

338.4791943

About the Report

Research undertaken when the author was affiliated with Institute of Applied Environmental Research, Griffith University, Brisbane.
Presently Lecturer in Sociology and Key Researcher, Centre for Rural Social Research, Charles Sturt University, Wagga Wagga.



**Great Barrier Reef
Marine Park
Authority**

PO Box 1379
Townsville Qld 4810
Telephone (077) 81 8811

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION	2
2 METHODOLOGY	3
3 RESULTS	7
3.1 Characteristics of Respondents	7
3.2 Reasons for Visiting North Queensland this Holiday	8
3.3 Likes about North Queensland	12
3.4 Dislikes about North Queensland	15
3.5 Best Experience this Holiday	17
3.6 Worst Experience this Holiday	20
3.7 Enjoyment of Holiday	22
3.8 Worries about Visiting North Queensland	26
3.9 Concerns About Animals, Insects and Marine Life	28
3.10 Degree of Concern about Potentially Dangerous or Unpleasant Aspects of North Queensland	29
3.11 Limiting Factors in Choice of Holiday Destination	34
3.12 Tourists' Future Enjoyment of the Reef	38
3.13 Awareness of Problems Facing the Reef	41
3.14 Management of the Reef and Holidays	42
3.15 Tourists' Perceptions of Coral	47
3.16 Importance of the Reef in Terms of this Holiday	48
3.17 Differences between Types of Tourists	49
3.18 Measuring the Quality of Coral	51
3.19 Relationship between Coral Quality and Price of Day Trip	53
3.20 Relationship between Coral Quality and Perceptions of Coral	54
3.21 Physical Features of Holiday Destinations Required by Tourists	56
3.22 Physical Features of Holiday Destinations Required by Tourists and their Location	60
3.23 Attitudes to Further Development of the Reef	62
3.24 Next Visit to North Queensland	66
3.25 Profile of Reef Visitors	69
4 CONCLUSION	71
5 RECOMMENDATIONS FOR FURTHER RESEARCH	73
ACKNOWLEDGMENTS	74
REFERENCES	75
APPENDIX 1 Definitions	77
APPENDIX 2 Questionnaire	79
APPENDIX 3 Formation of Scale to Measure Importance of Reef on Holiday	91
APPENDIX 4 Collapsing Responses of Open Ended Questions	95
APPENDIX 5 Collapsing Multiple Responses	101

TABLES

1	Origin of Respondent	7
2	Income Profile of Reef Visitors	9
3	Age Profile of Reef Visitors	9
4	Reasons for Visiting North Queensland this Holiday	10
5	Likes about North Queensland	13
6	Dislikes about North Queensland	16
7	Best Experience this Holiday	19
8	Worst Experience this Holiday	21
9	Enjoyment of Holiday 1	23
10	Enjoyment of Holiday 2	24
11	Worries about Visiting North Queensland	27
12	Concerns about Animals, Insects and Marine Life	29
13	Degree of Concern about Potentially Dangerous or Unpleasant Aspects of North Queensland	31
14(A)	Degree of Concern about Potentially Dangerous or Unpleasant Aspects of North Queensland (breakdown)	32
14(B)	Degree of Concern about Potentially Dangerous or Unpleasant Aspects of North Queensland (breakdown)	33
15	Limiting Factors in Choice of Holiday Destination	35
16	Limiting Factors in Choice of Holiday Destination (breakdown)	37
17	Tourists' Future Enjoyment of the Reef	38
18	Tourists' Future Enjoyment of the Reef (breakdown)	39
19	Awareness of Problems Facing the Reef	41
20	Management of the Reef and Holidays 1	43
21	Management of the Reef and Holidays 2	44
22	Management of the Reef and Holidays 3	45
23	Management of the Reef and Holidays 4	46
24	Importance of the Reef in Terms of the Tourist's Holiday	50
25	Reefs Visited, Cost of Tickets and Quality of Coral	52
26	Coral Reefs Classified according to Price and Coral Quality	54
27	Association between Coral Quality and Price	54
28	Relationship between Coral Quality and Reefness	55
29	Relationship between Coral Quality and Perceptions of Coral	56
30	Physical Features Required of a Holiday Destination	58
31	Physical Features Required of a Holiday Destination (breakdown)	59
32	Location of Respondent and Physical Features Required	61
33	Attitudes to Further Development of the Reef	63
34	Location of Respondent and Attitude to Development	65
35	Attitude to Development and Physical Features Required of a Holiday Destination	66
36	Next Visit to North Queensland	67
37	Timing and Reason for Next Visit to North Queensland	68
38	Physical Requirements of Tourists Planning to Return to North Queensland	69

EXECUTIVE SUMMARY

This research reports the opinions and perceptions of tourists who are visiting the Great Barrier Reef. A range of issues relating to the respondents' holidays on the Reef, their reasons for visiting north Queensland, their likes, dislikes, and concerns, as well as their perception of coral, and their opinions on issues such as future development, are covered.

A total of 354 tourists were interviewed during two field trips in August/September and December 1986, representing the peak winter tourist season, and the off-peak summer tourist season. Interviewing took place at several locations along the length of the Great Barrier Reef.

Tourism in the Reef region comprises two main groups: first timers who are attracted primarily because of the reef; and repeat tourists who return because of the idyllic weather and general atmosphere of the Reef, and wish to relax on their holiday rather than being particularly interested in the Reef itself.

Many tourists who visit the Great Barrier Reef, visit because of the weather and the relaxed nature of Reef holiday destinations. They tend to be repeat visitors and are mostly Australian. For them the Reef is a regular holiday destination, and will continue to be so.

Tourists who are particularly interested in the Reef, tend to be first timers, and do not necessarily plan to return to the reef. Most international tourists fall in this category. North Queensland was perceived as a safe place, and tourists generally had no fears or special concerns about holidaying in north Queensland.

While the reasons for holidaying in north Queensland for the return tourists are more related to the weather and relaxation, and first timers are more concerned about the reef, other differences between the two groups tend to be small. Both groups are concerned about over-development and almost all tourists interviewed consider that there should be no further development on the Reef.

Differences in the physical requirements demanded of holiday destinations between the two groups were also small. Therefore, in terms of planning, it is possible that the two groups, despite their different orientations in terms of holidays, discovery versus relaxation, may not require different facilities. Furthermore, it does indicate that the first timer international group may be over-served, in that the standard, cost and type of facilities being provided are more than is required by them. Should this be the case, there are profound flow-on implications for the tourist industry in Queensland as it would appear that there is too much luxury hotel development, and not enough facilities for low and middle income family groups.

Tourists can appreciate coral quality. Tourists who see higher quality coral have greater satisfaction than tourists who see poorer quality coral. However, the relationship between coral quality and coral perception is affected by other variables.

It is evident that the Australians returning to the Great Barrier Reef will contribute more to future tourism on the Reef than return international tourism. First time international tourism, presently growing at a fast rate, may be less important in the future if factors associated with the attractiveness of Australia change. These factors include the current fashion of things Australian in the United States, the value of the US and Australian dollars, and the threat of terrorist attack on US tourists in Europe and other places.

In order to attract more return international tourists the tourist industry may be advised to examine how to establish a tourist industry that has a uniquely Australian character, and offers something different to other holiday destinations closer to the home countries of the international tourists, without excluding domestic tourists.

1 INTRODUCTION

The Great Barrier Reef is the largest living organism in the world, is one of the natural wonders of the world, and is one of five locations in Australia listed as a World Heritage area. With increases in tourist visitation to the area, and other potential threats to the survival of the reef such as the crown-of-thorns starfish, management plans for the area are required.

This report provides information about one of the factors that must be considered when preparing management plans - tourists. Tourists have impacts on the reef that must be managed, but they are also affected by management plans. Therefore, the responses of tourists are important to the success of Reef management plans.

Since the Great Barrier Reef is an important tourist attraction to north Queensland, and a major stimulus to economic activity in the region, care must be taken to manage the resource properly, so that tourism in north Queensland can be a sustained industry. Since many tourists may be attracted to the natural environment and low scale development of the Reef, further development on the reef, especially development that does not capitalize on the unique nature of the Reef, may in the long run, not contribute to sustained tourism. Uncontrolled development would then destroy the very thing that attracted tourists to the Reef in the first place.

This report discusses the nature and opinions of tourists visiting the Great Barrier Reef in order to provide background information useful in the decision making process required for the preparation of management plans for the area.

Project Objectives:

To undertake a study of attitudes of tourists in north Queensland to selected aspects of their holiday with particular emphasis on determining the importance of the Great Barrier Reef in their holiday choice and their opinions on some reef-related issues.

The project shall be executed in the following manner:

- (a) A questionnaire developed, in consultation with the GBRMPA Project Officer, to determine: general reasons for undertaking a holiday in north Queensland, travel history and preferences, experience of and importance of the Great Barrier Reef and attitudes to specific issues of reef quality, level of development and phenomena which may affect their enjoyment e.g. cyclones, crown-of-thorns starfish, box jelly fish. The questionnaire is to be developed from unstructured interviews (to identify issues important to tourists) and tested.
- (b) Surveys are to be conducted by personal interview. As far as practicable to minimize costs, the surveys should be conducted in conjunction with the research being undertaken by the Institute of Applied Environmental Research on the socio-economic effects of crown-of-thorns starfish.
- (c) The sample should be selected to represent tourism on the Great Barrier Reef and based on published information on north Queensland tourism.
- (d) The survey should be conducted to represent the 'peak' winter season and a summer 'off-season' period.

2 METHODOLOGY

This study was conducted in conjunction with a project examining the economic and socio-economic impacts of the crown-of-thorns starfish on tourism (Hundloe, Vanclay & Carter 1987). Linking these two projects resulted in considerable savings in field costs and respondent burden. However, it led to a lengthy questionnaire. Furthermore, this study, being the more secondary project, was restricted in methodology to that required for the primary project.

The questionnaire was designed to satisfy the requirements of both studies. Linking the two studies had advantages beyond that of expediency. Questions relating to tourists' holiday experiences provided a background setting in which questions about the crown-of-thorns starfish could be asked in an appropriate context.

Preliminary unstructured interviewing was conducted at a number of locations in the Cairns region in May 1986, to provide a basis for the design of the questionnaire. Previous research, in particular the Unisearch report (Glaser & Wilkinson 1981), and the GBRMPA Project Officer, Ms Sally Driml, were other sources.

Personal interviews were conducted during two periods in 1986, August/September and November/December in order to represent the winter and summer tourist seasons. A total of 354 tourists were interviewed, with roughly an equivalent number from each season. A refusal rate of less than 10% was encountered.

Of all respondents, 92% were on holidays in the Reef region, while 8% were in the Reef region primarily for business and were undertaking visits to coral sections of reef in conjunction with the trip. People who were in north Queensland exclusively for business were excluded from the sample and were not interviewed.

The primary aim of the sampling strategy, as required for the major study, was to interview tourists who had seen coral. Interviews were conducted in many different locations ranging over the majority of the reef area, from Heron Island in the south to Agincourt Reef north of Port Douglas, with the primary interviewing locations being: Green Island, Dunk Island, Great Keppel Island, and the Whitsunday group; and boat trips visiting Low Isles, Agincourt Reef, John Brewer Reef, and Lady Musgrave Island. Interviews were also conducted at a range of other locations. Dunk Island does not have coral, but most resort guests visit Beaver Cay on an excursion from Dunk Island during the course of their stay at Dunk.

A number of strategies were employed to gain access to respondents. Captive audiences on return boat trips from coral sections of the reef accounted for 21% of respondents. 56% of respondents were interviewed in common areas at resorts, e.g. on the beach, at the dining area, near the swimming pool etc. 8% were interviewed in their resort motel rooms, and 7% were interviewed at the island camping areas. Other strategies on the mainland accounted for the remaining 8% of respondents interviewed.

Demographic data relating to the place of origin, age and sex of respondents was compared to published data on Great Barrier Reef tourism (ABS 1986, QTTC 1986). The length of stay for international tourists was also considered. Statistical techniques revealed that the sample was representative of the tourist population, with the exception that respondents from Queensland were undersampled. Such undersampling is unlikely to cause problems in the analysis. Furthermore, this undersampling may be a function of the different time periods between the population data and the sample data, or in the differences in the actual tourist population being considered by each study.

A more likely source of bias in this study is from the sampling strategy. The stated aim of the crown-of-thorns starfish study was to survey people who had seen coral. This could result in an oversampling of 'Reef' people, whereas with only minimal mainland interviewing, people who choose to have holidays in mainland north Queensland will be undersampled. To some extent it is possible to consider differences between 'Reef' people and 'Mainland' people by examining the responses to each dependent variable considered by location of interview and other locations in north Queensland that the respondent has visited. However, there still is likely to be an overstatement of the reef in comparison to other north Queensland tourist destinations. Much valuable information can still be extracted from this report, especially in relation to people who come to north Queensland to see the reef. This study is to be regarded as a study of the perceptions and opinions of Reef visitors, not of north Queensland tourists.

Sampling strategies could also have led to the undersampling of 'active' tourists, those engaged in fishing, scuba diving etc.

Although international tourists are not under-represented as a group, it is possible that certain sub-groups of international tourists are undersampled, particularly those from non-English speaking backgrounds. Funding for this study did not allow for foreign language interviewing, and difficulties in the interview schedule would not easily allow its translation and self-completion by non-english speakers. Data for this study was collected in 1986, before the rapid growth in Japanese tourism, and Americans constituted the bulk of international tourists to the Reef. In the analysis presented, international tourists are examined as a group, however it is quite likely that there are major differences between different categories of international tourist and care must be taken in generalizing these results.

The study area referred to in this report is the Great Barrier Reef region and is defined as the coastal region between Bundaberg and northern Cape York including all islands and reefs. To be included in the study, the respondent must have visited the reef region as so defined, independent of the location of interview. The economic constraints on interviewing meant that interviewing was concentrated to a number of specific locations within the reef region and on the mainland south of Agincourt Reef. As there is relatively little tourism north of Port Douglas, exclusion of the far northern reef region should have little effect on results.

Analytical Techniques

The analysis presented in this report is not conducted in the usual framework of scientific inquiry, in that the analysis presented is atheoretical. The report presents information useful to considerations relating to the management of tourism on the reef.

The questionnaire allowed for the possibility of a very large range of relationships to be examined. In consultation with the GBRMPA Project Officer, only issues of particular interest to GBRMPA have been explored, although the data set would allow for a much wider investigation into the nature of tourism on the reef. For example, the data set could be interrogated with more of a market research orientation for the purposes of promoting tourism on the reef, if this was desired. Issues that have been examined in this report relate to the importance of coral viewing and coral quality in tourists' holidays, tourists' attitudes to further development in the reef area, factors that may affect future growth of tourism in the reef region. In addition, many variables contributing to the understanding of these issues, were examined, such as reasons for visiting north Queensland, likes and dislikes, best and worst experiences, fears and concerns, opinions on the management of the reef and the importance of holidays.

Much of the analysis is exploratory giving a general overview of possible relationships, rather than a definitive statement of the exact relationship between variables. In many cases, further research is strongly recommended, especially where the findings of this report would have an impact on decision making.

Much of the analysis presented was not considered in great detail at the time of designing the questionnaire and survey methodology: it was requested only in the analysis stage of the research. It is therefore likely that research specifically dedicated to those issues would provide a more insightful analysis than is presented here. However, this study should be helpful in further research design and in illustrating where further research is required. A number of problems that have emerged in the analysis of this study are the direct result of decisions made for the primary study, and outside the control of this analysis. For the most part, these problems are small, but have added to the difficulty of analysis.

The independent variables that have been considered in this study relate to different categories of tourists, for example: the origin of the tourists; the residential status of tourists (i.e. resort guest, camper, day tripper); diver status; fisher status; whether a first timer to north Queensland or a return visitor; season; and the amount of previous coral experience, whether on the Great Barrier Reef, or other parts of the world. Different categories of tourists would be possible, however selection of the independent variables was from considerations relating to the management of the reef, and not from the point of view of tourism promotion or sociological perspectives. As such, analysis from these other perspectives was not undertaken.

In the interpretation of this report, care should be taken to consider the possibility of confounding. There is some confounding among the independent variables. This is potentially important since the differences that are observed between two variables may be due to their relationship with the third variable. For example, there is a very strong relationship between the origin of the tourist and whether it is the tourist's first trip to north Queensland. Only 11% of international tourists are return visitors, while 58% of Australians are return visitors. Locals have been excluded from analysis when considering relationships involving first trip to north Queensland. This means that results of relationships including the variable for first time/repeat visit will resemble the relationship including the origin of the tourist. Without further analysis, it would not be possible to determine if the difference is due to the respondent being a return visitor, or a first timer, or whether it is because the tourist is from overseas. With further analysis it is possible to isolate the effect of each variable. Because this report should be regarded as exploratory, such analysis has not been done routinely. However, the confounding of relationships has been examined where it is specifically important in the understanding of the analysis of important issues. If other issues are regarded as being important, further analysis examining the effect of confounding may be required.

Some other variables that could have a potential for confounding are:

- tourist origin and season. International tourists comprise 28% of winter tourists, and 42% of summer tourists in this survey.
- first time/repeat visit and season. First timers comprise 54% of winter tourism and 65% of summer tourism.
- diver status and season. Divers comprise 12% of winter tourists and 21% of summer tourists in this survey.
- fisher status and season. Fishers comprise 24% of winter tourists and 12% of summer tourists in this survey.
- origin of tourist and coral experience. 70% of locals had Great Barrier Reef coral experience, while 44% of Australians had Great Barrier Reef coral experience, and only 10% of international tourists had Great Barrier Reef experience.
- tourist origin and fisher status. 23% of Australians were fishers, while only 12% of international tourists were fishers, and only 10% of locals were fishers in this study.

- coral experience and first time/repeat visit. 52% of first timers had no previous coral experience, while only 18% of repeat visitors had no previous coral experience. No first timer could have previous coral experience on the Great Barrier Reef.
- fisher status and first time/repeat visit. Fishers comprised 24% of return visitors but only 15% of first timers.
- fisher status and diver status. Fishers comprised 16% of non-divers and 29% of divers.

All the relationships described above were statistically significant. This does not indicate that relationships involving these variables will be confounded, only that the potential for confounding exists. For some relationships, any confounding that is occurring could be quite severe, while for others the relationships are weak but significant, and the effect through confounding relatively small. Further analysis would be required to identify the true effect of any particular variable. For the most part, however, interpretation undertaken considering the possibility of confounding should be satisfactory for most applications of this analysis.

Many questions in the questionnaire were open ended and respondents were allowed to offer as many responses as they felt were necessary to portray how they felt in response to the question. These questions were analysed by multiple response procedures. While multiple responses were necessary for the validity of the results, one disadvantage is that statistical tests based on probability cannot be applied. Statistics have been used in the analysis of these data where appropriate, but the attempt has been to present a report that is available to a wide audience. Appendix 5 provides further details about the analysis of multiple responses.

3 RESULTS

3.1 Characteristics Of Respondents

As previously stated, the sample is representative of Reef tourism. The following section provides a description of the study respondents. For more precise descriptions of Reef tourism in general, refer to Driml (1987).

Sex: Of respondents interviewed 55% were male and 45% female.

Origin: Respondents came from all around Australia (Table 1).

Table 1 Origin Of Respondent

Origin/Place of Residence	%
New South Wales	21.5
Victoria	18.4
Queensland *	15.8
Western Australia	2.3
South Australia	4.0
Tasmania	0.6
northern Territory	1.1
Australian Capital Territory	0.8
Overseas residents	35.6
Total	100.0
...	(n=354)
(* 5.6% of all respondents resided in north Queensland)	

First or Return Trip: For 56% of respondents it was their first trip to north Queensland. 13% of respondents were on their second trip, 8% on their third trip, and 17% had travelled to north Queensland on more than three occasions. 8% of respondents had made another trip to the region during the 12 months preceding the interview date, and 3% had made more than one previous trip during that time.

Length of Holiday: While non-local tourists are on holidays away from home, tourists who reside within north Queensland (locals), tended to be on day trips away from home, or on short two or three day holidays. The median value for the length of holiday for locals was one night away from home. Median values are given rather than the mean because the mean value would be skewed by the presence of extreme values by tourists on extended holidays. For other Australians, the median value for nights away from home was 14, with the median value for nights spent in north Queensland being 10. Australians tend to have one to three week holidays in north Queensland.

International tourists have a median value of 33 nights away from home, with a median of 8 nights in north Queensland. They tend to have one to two month long holidays spending one to two weeks in north Queensland. However, 20% of international tourists were on extended holidays spending over three months away from home.

Major Forms of Accommodation: 57% in hotel or motel accommodation; 14% camping; 6% in private homes; 6% in caravans; and 5% staying in youth hostels. Various other forms of accommodation accounted for the remaining 12% of respondents.

Major Form of Transport to the Region: plane 66%; car (19%); bus (4%); and train (3%).

Major Form of Transport within the Region: 23% of respondents travelled by private car; 16% by bus; 12% by rental car; and 9% by plane. 26% of respondents indicated they did not require any form of transport whilst in the region (generally resort guests).

Socio-economic Status: Respondents tended to be from the upper levels of socio-economic status. The majority, 73% were members of the workforce, of which 45% were classified as in professional or technical employment. A further 12% were in management or administration, 12% employed as tradespeople, 9% as clerical workers, and 9% in retail or service industries. 13% were in other forms of employment. Respondents not currently in the workforce included: students (8%); home duties (6%); retired (5%); and 4% were unemployed.

Education: Respondents had high levels of education: 46% held a tertiary degree; 23% had completed secondary school; and 13% had a trade or nursing certificate. The remaining 18% had left school at various times prior to the completion of secondary school.

Income: Respondents tended to have high gross family incomes as shown in Table 2 below. However, low levels of income were recorded for some respondents who were on lengthy vacations, thus not being a representation of their normal income level. The mean gross family income was conservatively calculated to be \$34,000 by using the mid point of each category and a conservative \$60,000 from the top category. Using a higher value to represent the \$50,000 plus category could substantially increase the estimate of the mean gross family income, as over 28% of respondents had an income of over \$50,000.

Age: Respondents were from all age categories (see Table 3) with a mean age of 36 years.

3.2 Reasons For Visiting North Queensland This Holiday

Respondents were asked, in an open ended question, to describe their reasons for visiting the north Queensland coastal region. The Weather was the most frequent response given as to why people come to north Queensland for their holiday (see Table 4). The Reef also appears to be important. Other features of north Queensland, for example Rainforests, are not so important but could be affected by the methodology of this study.

Responses to direct questions, as opposed to open ended questions, may be a better indicator of the relative importance of all the features of north Queensland. Because of the large number of categories, and the small number of responses recorded by each category, the categories have been combined into 13 categories for further analysis (see Table 4).

Table 2 Income Profile Of Reef Visitors

Income (\$)	%
No income	3.6
0 - 5,999	7.8
6,000 - 11,999	3.3
12,000 - 17,999	9.9
18,000 - 25,999	15.8
26,000 - 31,999	10.4
32,000 - 39,999	11.0
40,000 - 49,999	10.0
50,000 +	28.7
Total	100.0
...	(n=335)
4 missing cases	
9 refusals (2.5%)	
6 don't know	

Table 3 Age Profile Of Reef Visitors

Age	%
15-19	4.0
20-24	19.8
25-29	17.8
30-39	24.0
40-49	15.9
50-59	9.3
60 +	9.1
Total	100.0
...	(n=353)
1 missing case	

Table 4 Reasons For Visiting North Queensland This Holiday

(breakdown)

	SEASON			ORIGIN OF TOURIST			Reef Day Trip	TOURIST STATUS			
	OVERALL	Winter	Summer	Local	Aust	over- seas		Resort Guest	Island Day Trip	Camper	Main- land
		(column percentages, multiple responses)									
weather	31	43	14	23	34	27	21	34	29	34	60
reef	22	22	21	15	13	37	28	19	21	28	7
relaxation	14	18	8	31	19	2	2	22	9	17	13
sightseeing	14	15	11	15	11	16	16	18	7	7	20
new	12	11	13	15	11	12	17	10	14	3	7
water activities	10	11	8	8	11	7	12	6	5	21	27
part of trip	10	5	18	0	9	14	17	6	13	3	13
visit friends	8	10	4	8	10	4	2	3	17	14	7
social	6	4	10	8	8	4	2	10	5	7	7
work	6	8	4	8	7	5	7	5	10	0	7
unique environment	6	7	3	0	7	5	5	3	7	10	13
repeat visit	5	3	7	0	7	1	7	7	3	0	0
money	3	3	3	0	4	1	3	2	3	3	7
	PREVIOUS CORAL EXPERIENCE					DIVER STATUS		FISHER STATUS			
	First Trip	Return Visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher		
weather	25	41	35	30	29	33	20	30	35		
reef	27	15	16	33	17	23	14	20	27		
relaxation	9	17	17	7	16	13	14	13	17		
sightseeing	16	10	10	12	18	14	9	14	12		
new	16	7	4	16	15	12	11	12	10		
water activities	5	16	16	10	3	7	23	8	17		
part of trip	14	6	4	12	14	10	14	10	12		
visit friends	8	8	8	9	7	8	4	9	2		
social	5	8	10	2	7	6	11	6	6		
work	7	6	6	6	7	7	4	6	8		
unique environment	4	9	10	4	3	6	7	5	10		
repeat visit	2	9	9	2	3	5	2	4	6		
money	2	5	4	1	3	3	2	3	2		

420 responses, n = 282

Respondents were allowed up to 3 responses.

Mean number of responses per respondent was 1.5.

72 missing cases due to 2 interviewers failing to ask this question. This is not likely to bias the results.

The factors affecting reason for visiting north Queensland this holiday are as follows:

Season

The two most common responses in Winter were the Weather (43%) and the Reef (22%), whereas in Summer the two most common responses were the Reef (21%) and Part of Trip (18%)

There were a number of differences between the Winter and Summer season in the reason for coming to north Queensland. These differences were probably due to the composition of tourists in each season. In particular, the Weather was stated more often in the Winter season (43%) than in the Summer season (14%), as was to Relax (18% vs 8%), Visit Friends and Relatives (10% vs 4%), and Water Based Activities (11% vs 8%). In contrast, Part of Trip was stated more often in the Summer season (18% vs 5%), as was Social reasons (10% vs 4%).

Origin of Tourist

For tourists from overseas the two most common responses were the Reef (37%) and the Weather (27%), while for Australians the two most common responses were the Weather (34%) and to Relax (19%). For locals, the two most common responses were to Relax (31%) and the Weather (23%).

Whereas international tourists were the most likely to state that the Reef was the reason why they came to north Queensland (37%), 13% of Australian tourists and 15% for locals stated so. Locals and Australian tourists were more likely to give to Relax as a response (31% and 19% respectively) than were international tourists (2%).

Tourist Status

Respondents were classified into visitor categories, i.e. Day Tripper, Resort Guest or Camper, with respect to the location where the interview took place, and on the day the interview took place. For some locations, e.g. outer reefs, the only type of visitor status possible is day tripping. Respondents interviewed at these locations were grouped together. For the few people interviewed at mainland locations, visitor status also was not applicable, and they were also grouped together.

There were considerable differences in the reason for coming to north Queensland for this holiday between the different categories. For all groups except Reef day trippers, the most frequent response was the Weather. Weather was the second most frequent response for Reef day trippers, whose most frequent response was the Reef. For campers and day trippers to Resort Islands, the second most frequent response was the Reef. For resort guests, the second most frequent response was to Relax, while for mainlanders, the second most frequent response was Water Based Activities.

First Trip to north Queensland

First timers' two most frequent responses were the Reef (27%) and the Weather (25%). Repeat visitors' two most frequent responses were the Weather (41%) and Relaxation (17%). Tourists on their first trip to north Queensland were most likely to give the reasons: Part of Trip (14% vs 6%), See Something New (16% vs 7%), the Reef (27% vs 15%), and to Sightsee (16% vs 10%). Return tourists were more likely to give the following reasons: the Weather (41% vs 25%), Water Based Activities (16% vs 5%), to Relax (17% vs 9%), and Unique Environment (9% vs 4%).

Previous Coral Experience

Tourists with previous coral experience on the Great Barrier Reef gave as their two most frequent responses, the Weather (35%) and Relaxation (17%). Tourists with coral experience only in other parts of the world gave the Reef as their most frequent response (33%) and the Weather (30%). Tourists with no coral experience gave the Weather (29%) and to Sightsee

(18%) as their most frequent responses. Tourists with previous coral experience in other places in the world were the most likely to give the Reef as a reason for coming to north Queensland (33%) compared to tourists who had no coral experience (17%), or tourists who had coral experience on the Great Barrier Reef before (16%).

Diver Status

The two most frequent responses given by divers were Water Based Activities (23%) and the Weather (20%), while for non-divers it was the Weather (33%) and the Reef (23%).

Non-divers were the most likely to state the Weather (33% vs 20%), and the Reef (23% vs 14%) as reasons for coming to north Queensland for their holiday. Divers were the most likely to give Water Based Activities (23% vs 7%). This is partly because diving was classified as a water based activity. However, if the respondent was to give 'diving on the reef' as their response, both diving and the reef would be classified as their reasons.

It does appear, therefore, that divers are less interested in the reef than non-divers, being more concerned with diving than the reef per se. However, it may be possible that the Reef is regarded to be a good dive site, and that respondents imply that the reef is important in their holiday in terms of their diving, even though this is not explicitly stated in their response. This finding should be used with caution until further research into the importance of the reef to divers.

Fishing Status

For both fishers and non-fishers the two most frequent responses were the Weather (fishers 35%, non-fishers 30%) and the Reef (27% and 20%). Fishers were more likely than non-fishers to give the Reef (27% vs 20%), Water Based Activities (17% vs 8%), and Unique Environment (10% vs 5%) as responses for coming to north Queensland. Non-fishers were more likely than fishers to give Visit Friends and Relatives (9% vs 2%) as a reason.

3.3 Likes About North Queensland

Respondents were asked, again to an open ended question, what they liked about north Queensland (see Table 5). The Weather was the best attribute of north Queensland. Other features of north Queensland appear to be relatively insignificant in comparison to this large response. However, as an open ended question, the responses say more about immediate concerns and thoughts of tourists than it does about realistic and well thought out responses. If it is Winter, a sunny day, and the Respondent is from Victoria, the fact that the weather is stated is hardly surprising. Similarly, that National Parks were mentioned only by one person does not indicate that tourists do not like National Parks. Put as a direct question most people would have said that they liked National Parks.

Because of the large number of categories, and the small number of responses recorded by each category, the categories have been combined into 15 categories for further analysis (see Table 5).

Table 5 Likes About North Queensland (breakdown)

	OVERALL	SEASON		ORIGIN OF TOURIST				TOURIST STATUS				
		Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Main-land	
		(column percentages, multiple responses)										
climate	59	59	59	65	62	52	54	66	61	50	40	
general atmosphere	33	36	31	30	31	38	38	36	27	24	45	
reef	18	15	20	0	14	27	25	10	18	35	5	
the sea	16	16	16	15	18	12	11	13	17	22	35	
relaxed	11	11	11	20	13	6	3	17	7	9	10	
friendly people	10	8	11	0	9	12	8	14	11	0	5	
natural history	8	10	7	5	6	12	10	5	12	4	15	
rainforest	7	8	5	0	8	5	14	2	7	4	15	
different	6	10	2	10	7	3	5	5	8	4	10	
islands	6	5	7	10	7	2	3	6	5	6	15	
water activities	4	1	7	5	4	4	6	3	1	9	5	
a particular resort	4	4	3	0	4	4	5	5	4	0	0	
seafood	2	1	3	0	2	2	2	2	5	0	0	
costs	1	2	0	0	1	1	2	1	1	0	0	
easy access	1	1	1	0	2	0	2	1	0	2	0	

662 responses, n = 347
7 missing cases from people who had not been in the region long enough to comment.

	First Trip	PREVIOUS CORAL EXPERIENCE			DIVER STATUS		FISHER STATUS	
		Return Visit	GBR exp	other place	Non Diver	Diver	Non Fisher	Fisher
climate	50	70	66	56	58	66	59	59
general atmosphere	36	29	33	36	36	19	32	38
reef	17	21	19	21	15	29	18	18
the sea	12	21	17	18	15	20	15	19
relaxed	7	15	17	5	11	8	10	14
friendly people	11	10	7	12	10	10	10	11
natural history	11	4	4	11	8	10	9	3
rainforest	8	5	4	8	7	7	7	5
different	6	5	4	5	6	5	7	3
islands	5	7	6	3	6	5	6	6
water activities	3	6	5	3	2	12	4	3
a particular resort	4	4	4	2	4	3	4	2
seafood	2	3	4	1	2	2	1	5
costs	1	1	1	0	1	0	1	0
easy access	0	2	3	0	1	2	1	0

The factors affecting likes about north Queensland are as follows:

Season

There were virtually no differences in the responses of tourists in Winter compared to responses in Summer in likes about north Queensland. In both seasons the two most frequent responses were the Weather (59% for both seasons) and the general Atmosphere of north Queensland (36% Winter, 31% Summer). The only differences worthy of comment were that in Winter, 10% of respondents said that north Queensland was Different, while only 2% gave this response in Summer. 7% of respondents in Summer stated that they liked Water Activities (swimming, fishing, diving), while only 1% gave this response in Winter.

Origin of Tourist

For all three groups the two most frequent responses were the Weather (65% local, 62% Australians, 52% International tourists) and the General Atmosphere (30%, 31%, 38%).

Locals and Australians were more likely to give the Weather as a response than were international tourists (65%, 62%, 52% respectively). Australians were more likely to give the Rainforest as a response than either international tourists or locals (8% vs 5% and 0% respectively) as well as the Sea (18% vs 12% and 15%). International tourists were more likely to give the Reef (27%) as a response than were Australians (14%) or locals (0%), as well as Natural History (12%, 6%, 5% respectively) and the General Atmosphere of north Queensland (38%, 31%, 30%).

Tourist Status

All types of tourist, except those interviewed on the mainland, gave the Climate as their most frequent response as to their likes about north Queensland. Mainlanders most frequent response was the General Atmosphere of north Queensland. This was the second most frequent response for all groups except for Campers, whose second most frequent response was the Reef. The second most frequent response for Mainlanders was the Climate.

First Trip to north Queensland

For both first timers and return visitors, the Weather and General Atmosphere were the two most frequent responses.

Repeat visitors to the Reef were more likely than first timers to suggest that the Weather (70% vs 50%), the Sea (21% vs 12%), and Relaxedness (15% vs 7%) were things they liked about north Queensland. First timers were more likely than repeat visitors to respond that the General Atmosphere (36% vs 29%) was something that they liked about north Queensland.

Previous Coral Experience

Given that tourists with previous coral experience on the Great Barrier Reef are repeat visitors to the reef, there was very little additional differences in response to likes about north Queensland between those tourists who had previous coral experience on the Great Barrier Reef, at other places in the world, and those who have no previous experience. For all three groups the Weather and the General Atmosphere of north Queensland were the two most frequent responses.

Diver Status

For divers, the two most frequent responses were the Weather (66%) and the Reef (29%), while for non-divers the two most frequent responses were the Weather (58%) and the General Atmosphere (36%). Divers were more likely than non-divers to give the Weather (66% vs 58%), the Reef (29% vs 15%), the Sea (20% vs 15%), and Water Activities (12% vs 2%). Non-divers were more likely than divers to give General Atmosphere as a response (36% vs 19%).

Fishing Status

There were no differences between fishers and non-fishers in their responses to likes about north Queensland. For both groups the two most frequent responses were the Weather (59% each) and the General Atmosphere (38% and 32%).

3.4 Dislikes About North Queensland

Respondents were also asked about what they disliked about north Queensland (see Table 6). While 42% of tourists disliked Nothing about north Queensland, the features of north Queensland that were most disliked were Stingers (11%), Humidity (9%) and Rain (4%) and Over-development (6%). Because of the large number of categories, and the small number of respondents in each category, these categories have been condensed into eight more comprehensive categories (see Table 6).

The factors affecting dislikes about north Queensland are as follows:

Season

In both Summer and Winter, the most frequent complaint was Nothing (43% and 40%). In Winter, the second most frequent complaints were Transport (12%) and Over Development (12%), while in Summer the second most frequent dislike was Nasties (19%). Nasties refers to annoying animals, insects and marine life. The higher incidence of Nasties in Summer is due to the number of complaints about stingers.

Winter tourists were more likely to complain about Over Development (12% vs 3%), and Transport issues (12% vs 7%), i.e. roads etc, than Summer tourists. Summer tourists were more likely to complain about the weather (17% vs 11%) and Nasties (19% vs 10%).

Origin of Tourist

For all three groups, the most frequent complaint was Nothing (40% local, 37% Australian, 50% international). For Australians and overseas tourists, Nasties were the second most frequent response (15% and 14%), while for locals, the Weather was the second most frequent dislike about north Queensland (35%).

Curiously, it was the locals who were more inclined to complain about the Weather (35%, compared to 13% for Australians or international tourists), or Nasties (30%, compared to 15% for Australians and 14% for international tourists). International tourists were the most likely to have no complaints (50% vs 40% Locals, 37% Australians). Australians were the most likely to complain about Over Development (9% vs 5% international, 0% Locals), and Transport (14% vs 10% Locals, 6% international tourists). The larger number of complaints from Australians about Transport reflects the fact that in this study 30% of Australians drove to the region.

Tourist Status

Nothing was the most frequent response by all categories of tourist. However, only 20% of campers gave this response, while 53% of Resort Guests gave this response, compared with 38% Reef day trippers, 37% island day trippers, and 45% of people interviewed on the mainland.

Table 6 Dislikes About North Queensland (breakdown)

	OVERALL	SEASON		ORIGIN OF TOURIST			TOURIST STATUS				
		Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Main-land
		(column percentages, multiple responses)									
nothing	42	40	43	40	37	50	38	53	37	20	45
nasties	15	10	19	20	15	14	13	12	17	18	20
weather	14	11	17	35	13	13	12	16	13	16	5
transport	9	12	7	10	11	6	12	4	11	16	10
over development	7	12	3	0	9	5	12	4	7	11	5
resorts	6	6	6	0	6	7	8	4	4	9	10
unfriendly people	5	6	4	0	7	2	2	2	8	7	15
other	10	15	7	10	12	8	8	9	11	14	15

	First trip	PREVIOUS CORAL EXPERIENCE				DIVER STATUS		FISHER STATUS	
		Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher
nothing	47	34	29	47	49	43	36	44	33
nasties	11	19	19	10	14	13	22	14	16
weather	11	15	19	12	11	14	16	14	12
transport	7	11	12	7	8	9	10	8	12
over development	8	6	7	7	7	7	5	7	9
resorts	7	5	4	7	6	6	5	6	3
unfriendly people	5	6	6	4	5	5	5	5	5
other	9	12	12	11	8	10	10	9	16

383 responses, n = 340

Respondents were allowed up to 3 responses.

Mean number of responses per respondent was 1.1.

14 missing cases from people who had not been in the region long enough to comment, or who otherwise did not know.

For all categories except resort guests, the second most frequent dislike about north Queensland was Nasties, while for resort guests it was the Weather. Resort guests who only stay on island resorts are not bothered by Stingers, as stingers are thought to only affect mainland beaches.

Tourists who were interviewed on Reef day trips were the most likely to complain about Over Development (12%). Campers also tended to complain about Over Development (11%), whereas only 4% of resort guests disliked Over Development.

First Trip to north Queensland

People on their first trip to north Queensland were more likely than repeat visitors to respond that they disliked Nothing (47% vs 34%) about north Queensland. Return tourists were more likely to complain about the Weather (15% vs 11%) and Nasties (19% vs 11%).

Previous Coral Experience

Tourists with prior experience on the Great Barrier Reef were more likely than other tourists to complain about Nasties (19% vs 10% for tourists with coral experience elsewhere in the world, 14% tourists with no coral experience), and were least likely to respond Nothing (29% vs 47% and 49%).

Diver Status

Divers were more likely than non-divers to complain about Nasties (22% vs 13%), and less likely to respond Nothing (36% vs 43%).

Fishing Status

Except that non-fishers were more likely to respond Nothing (44% vs 33%), there were only minimal differences between the two groups.

3.5 Best Experience This Holiday

Tourists were asked to describe their best experience on their holiday. The most frequent response was 'just being here' being given by 16% of respondents. A lot is implied by this statement, but the respondents giving this response usually were not referring to specific places or events but to the relaxation factor that is associated with being away from home.

5% of all respondents did not know what their best experience was. In other words, no one experience stood out better than other experiences. Some tourists gave specific places as their best experience, however, their responses would be a function of the places they went to, and the order in which they went to those places.

These responses can still be coded into a small number of categories for further analysis (see Table 7). Of the collapsed categories, seeing the reef was the most frequent response being given by 31% of tourists who could give a best experience. Relaxing was given by 23% of tourists, experiences relating to other people by 14%, an event or place outside the Reef region was given by 11%, a further 6% gave events or places related to the mainland. 8% gave activities or experiences relating to the Sea as their best experience this holiday. 6% gave a range of other responses including good accommodation and food.

Responses to many questions, but this question particularly, could be influenced by the fact that the interview occurred at some point during the respondent's holiday, and not at the end of it. How this is affected by the variable stage of completion of holiday is not certain and would require further research.

The factors affecting best experience this holiday can be described as follows:

Season

Seeing the reef (33%) and friendly people (21%) were the two most frequent responses given in Winter. In Summer, however, relaxing was the most frequent response (32%, 12% in Winter), with seeing the reef being given the second most frequent number of responses (30%).

Origin of Tourist

Curiously, locals were more likely than Australian or international tourists to give seeing the reef as their best experience (39%, compared to 29% for Australians, 34% for international tourists).

Tourist Status

Reef day trippers were the most likely to give seeing the reef as their best experience (43%). Resort guests and campers were the most likely to give relaxing as their best experience (30% and 36%).

First Trip to north Queensland

First timers to north Queensland were more likely than repeat visitors to give seeing the reef as their best experience (34% vs 27%). Repeat tourists were more likely to give relaxing (26% vs 21%), or experiences relating to the sea (15% vs 5%).

Previous Coral Experience

Tourists seeing coral for the first time were the most likely to give seeing the reef as their best experience (37% vs 30% for tourists with coral experience elsewhere in the world, and 26% for Great Barrier Reef coral experience).

For tourists who have coral experience on the Great Barrier Reef prior to this trip, the most frequent response was relaxing (28%).

Diver Status

The most frequent response given by divers and non-divers alike was seeing the reef, however divers were much more likely to give this response than were non-divers (43% vs 29%).

Fishing Status

There was very little difference in the responses between fishers and non-fishers.

Table 7 Best Experience This Holiday (breakdown)

	OVERALL	SEASON		ORIGIN OF TOURIST			TOURIST STATUS				
		Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Main-land
		(column percentages)									
seeing the reef	31	33	30	39	29	34	43	25	36	27	27
relaxing	23	12	32	39	24	20	20	30	11	36	7
friendly people	14	21	9	8	14	15	7	18	10	18	27
event out of region	11	8	12	0	5	20	20	5	16	5	7
sea env/activities	8	11	6	0	12	3	2	14	6	5	13
mainland places	6	8	4	0	7	4	5	1	10	9	20
other	6	6	6	15	7	4	5	7	11	0	0

	First trip	PREVIOUS CORAL EXPERIENCE				DIVER STATUS			FISHER STATUS	
		Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher	
seeing the reef	34	27	26	30	37	29	43	32	31	
relaxing	21	26	28	21	22	25	18	23	25	
friendly people	15	15	12	19	12	14	14	15	10	
event out of region	15	6	8	20	5	11	10	10	12	
sea env/activities	5	15	12	3	9	9	4	8	10	
mainland places	6	6	7	3	7	6	8	6	5	
other	5	7	7	3	8	7	4	6	7	

(n=319)

Respondents were allowed only 1 response.

35 missing cases from people who had not been in the region long enough to comment.

3.6 Worst Experience This Holiday

Tourists were also asked to describe their worst experience this holiday. 31% of all tourists considered that they had no worst experience to report. The wide range of responses given can be collapsed into a smaller number of categories for further analysis (see Table 8).

In the new categorization, the worst experience given by the second largest number of people was travelling, being given by 16% of tourists. 14% had worst experiences relating to other people. For 12%, the weather was the worst experience, while another 12% befell a personal accident or misfortune.

The factors affecting worst experience this holiday are as follows:

Season

There was very little difference between seasons in the response given to this question.

Origin of Tourist

Australians were the most likely to consider that they had no worst experience (33%), whereas 28% of international tourists, and only 15% of locals stated they had no worst experience to report. International tourists were the most likely to consider that travelling was the worst experience (24%). Locals were the most likely to have suffered from personal accidents or misfortunes (39%).

Tourist Status

Resort guests were the most likely to report that they had no worst experience (39%). Campers were the least likely to state that they had no worst experience (10%). Campers were the most likely to give the weather as their worst experience (21%).

First Trip to north Queensland

Tourists on return trips to north Queensland were more likely than first timers to state that they had no worst experience (35% vs 29%).

Previous Coral Experience

There were only small differences in responses between tourists in terms of their previous experience with coral.

Diver Status

There were no differences worth mentioning between divers and non-divers in terms of their worst experience.

Fishing Status

Non-fishers were more likely than fishers to state that they had no worst experience to report (33% vs 20%). Fishers were more likely than non-fishers to complain about the weather (16% vs 11%) and to report worst experiences involving personal accidents or misfortunes (20% vs 10%).

Table 8 Worst Experience This Holiday (breakdown)

	OVERALL	SEASON		ORIGIN OF TOURIST			TOURIST STATUS				
		Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Main-land
		(column percentages)									
none	31	29	32	15	33	28	28	39	31	10	22
travel	16	15	17	0	12	24	19	12	18	21	17
related to others	14	13	15	23	14	14	11	14	13	21	17
weather	12	11	13	8	11	13	14	11	10	21	0
personal accident	12	12	11	39	13	7	5	16	10	15	6
bad accommodation	7	11	4	0	10	3	9	5	7	3	22
travel problems	5	7	3	0	4	7	9	3	7	0	11
insects, stingers	3	2	4	8	2	4	4	1	1	10	6
other	1	1	1	8	1	1	2	0	3	0	0

	PREVIOUS CORAL EXPERIENCE					DIVER STATUS			FISHER STATUS
	First trip	Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	
none	29	35	33	28	31	32	26	33	20
travel	19	14	13	18	17	17	10	15	20
related to others	13	15	14	16	12	13	18	15	11
weather	15	8	9	16	11	12	12	11	16
personal accident	10	12	14	6	14	10	20	10	20
bad accommodation	6	10	7	5	8	8	4	6	9
travel problems	5	5	5	7	3	5	4	6	2
insects, stingers	3	2	3	2	4	2	8	3	2
other	1	1	0	1	2	1	0	1	0

(n=305)

Respondents were allowed only 1 response.

49 missing cases from people who had not been in the region long enough to comment.

3.7 Enjoyment Of Holiday

Tourists were asked to rate each item on a list of items comprising activities often undertaken in terms of their enjoyment on this holiday (see Tables 9 and 10).

Overall, to relax was the most important 'activity' with a mean score of 1.3 (1 very important, 2 somewhat important, 3 not very important, 4 not important at all). Other important features were a warm sunny climate (1.4), a natural environment (1.5), to enjoy scenery (1.5), and friendly people (1.6). Seeing coral was somewhat important (2.0), but was more important for international tourists (1.7) than for Australians (2.1) or locals (2.4).

The factors affecting enjoyment of holiday were as follows:

Season

There were little differences between seasons. The most obvious difference was that swimming was more important in Summer than in Winter (1.7 vs 2.1). This was also the case for snorkelling (2.2 vs 2.5) and other sporting activities (2.5 vs 2.8). Fishing, however, was more important in Winter than in Summer (3.1 vs 3.4).

Night life and entertainment was also more important in Summer than in Winter (2.7 vs 3.1) but still tends to be not very important.

Origin of Tourist

To relax was more important for locals (1.0) and other Australians (1.2) than for international tourists (1.5). For international tourists the most important activity in terms of enjoyment of this holiday was to see something new (1.2, compared to 1.8 and 1.7 for locals and Australians). Seeing coral was more important for international tourists (1.7) than for Australians (2.1) or locals (2.4).

Overall, items relating to relaxing in general, e.g. to relax, to get away from everything, sunbathing, and fishing, were more important to Australians and locals than they were to international tourists. On the other hand, items relating to discovery, e.g. scenery, see something new, see coral, nature walks, country towns, and historical places, were more important to international tourists than they were to Australians or locals. The reef and coral and marine life were far more important to international tourists (1.3, 1.5) than they are to Australians (2.1, 2.2) or to locals (2.1, 2.4).

Tourist Status

Many differences were recorded between the groups representing different types of tourist. Resort guests tended to place more importance on those items that are associated with relaxation, e.g. a warm sunny climate, to get away from everything, a coastal location, visiting islands, swimming, sunbathing, and other sporting activities. Whereas they placed least importance on the reef and coral.

Reef Day trippers and day trippers to resort islands tended to place more importance on the discovery items, to enjoy scenery, see something new, see coral, nature walks, national parks, country towns, historical places, and sugar cane.

Campers placed importance on a mixture of discovery and relaxation items but also placed greater importance on activities such as snorkelling, diving and fishing. The campers category is a composite group comprising two groups of campers. One group would consist of campers on resort islands who are primarily after a low cost relaxation type holiday. The second group comprises people who are dedicated divers who have gone to dive locations such as North West, Masthead, and Lady Musgrave Islands, where there are only limited facilities.

Table 9 Enjoyment Of Holiday 1

	OVERALL	SEASON		ORIGIN OF TOURIST			TOURIST STATUS				
		Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Main-land
		(cell means)									
reef overall importance	1.8	.	.	2.1	2.1	1.3	1.6	2.1	1.6	1.6	1.7
coral importance	1.9	.	.	2.4	2.2	1.5	1.8	2.2	1.7	1.8	1.9
to relax *	1.3	-	-	1.0	1.2	1.5	.	.	.	.	.
warm sunny climate ***	1.4	.	.	.	.	.	1.5	1.3	1.5	1.6	1.2
a natural environment	1.5	.	.	.	.	.	.	.	.	.	.
enjoy scenery	1.5	.	.	1.6	1.6	1.3	1.4	1.6	1.4	1.4	1.2
friendly people *	1.6	-	-	.	.	.	.	.	.	.	.
see something new	1.6	1.7	1.4	1.8	1.7	1.2	1.4	1.7	1.4	1.8	1.4
get away from everythg	1.6	.	.	1.8	1.4	1.8	1.9	1.4	1.7	1.5	1.7
coastal location	1.6	.	.	.	.	.	1.9	1.5	1.6	1.5	1.5
visit islands	1.8	.	.	.	.	.	2.2	1.7	1.8	1.6	2.2
a quiet place	1.8	1.7	1.9	.	.	.	.	.	.	.	.
tropical location *	1.8	-	-	.	.	.	.	.	.	.	.
swimming	1.9	2.1	1.7	.	.	.	2.1	1.7	2.0	1.7	2.0
to meet people **	1.9	-	-	.	.	.	.	.	.	.	.
see coral	2.0	2.1	1.8	2.4	2.1	1.7	1.8	2.2	1.7	1.7	2.2
nature walks **	2.2	-	-	2.2	2.4	2.0	2.3	2.5	1.8	1.7	2.2
eat seafood	2.2	.	.	.	.	.	.	.	.	.	.
go to National Parks	2.3	.	.	.	.	.	2.1	2.6	2.0	2.2	1.9
sunbathing	2.3	.	.	2.1	2.2	2.5	2.6	2.0	2.4	2.1	2.3
cost of holiday *	2.3	-	-	.	.	.	.	.	.	.	.
snorkelling	2.4	2.5	2.2	.	.	.	2.4	2.5	2.4	1.8	2.6
see rainforest	2.4	.	.	.	.	.	2.3	2.6	2.2	2.6	1.8
other sporting	2.6	2.8	2.5	.	.	.	3.1	2.3	2.7	2.6	2.9
visit country towns	2.9	.	.	3.1	3.1	2.5	2.5	3.3	2.4	3.0	2.9
nightlife & entertainmt	2.9	3.1	2.7	.	.	.	.	.	.	.	.
historical places	2.9	.	.	3.1	3.1	2.5	2.6	3.1	2.4	3.2	3.1
visit friends & rels	3.2	.	.	.	.	.	3.4	3.4	2.9	3.1	3.2
go fishing	3.3	3.1	3.4	3.3	3.1	3.6	3.4	3.3	3.4	3.0	2.9
scuba diving	3.3	.	.	.	.	.	3.6	3.4	3.3	3.0	3.3
see sugar cane *	3.6	-	-	.	.	.	3.5	3.8	3.4	3.8	3.4

* Question asked in August field trip only

** Item asked in Summer (December) field trip only.

*** This wording of this item was used only in the December field trip. Two similar items were asked in the Winter field trip, Sunshine and A Warm Climate. The results presented here represent the combination of this item (Summer field trip) with A Warm Climate (Winter field trip). There was very little difference between all three items.

Table 10 Enjoyment Of Holiday 2

	PREVIOUS CORAL EXPERIENCE					DIVER STATUS		FISHER STATUS	
	First trip	Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher
	(cell means)								
reef overall importance	1.6	2.1	2.1	1.5	1.8	1.9	1.5	.	.
coral importance	1.7	2.2	2.2	1.7	1.9	2.0	1.5	.	.
to relax *	.	.	.	.	.	.	.	.	.
a warm, sunny climate	.	.	.	.	.	.	.	.	.
a natural environment	.	.	.	.	.	.	.	1.5	1.3
enjoy scenery	.	.	.	.	.	.	.	.	.
friendly people *	1.5	1.8	1.9	1.5	1.5	1.7	1.2	.	.
see something new	1.3	2.0	2.0	1.2	1.4	.	.	.	.
get away from everythg	1.6	1.4	.	.	.	.	.	1.6	1.3
coastal location	.	.	.	.	.	.	.	.	.
visit islands	.	.	.	.	.	.	.	.	.
a quiet place	.	.	.	.	.	.	.	.	.
tropical *	.	.	.	.	.	.	.	.	.
swimming	.	.	.	.	.	2.0	1.5	1.9	1.7
to meet people	.	.	.	.	.	.	.	.	.
see coral	1.8	2.1	2.2	1.8	1.8	2.0	1.6	.	.
nature walks	2.1	2.4	.	.	.	.	.	.	.
eat seafood	.	.	.	.	.	.	.	2.3	2.0
go to National Parks	.	.	.	.	.	.	.	.	.
sunbathing	.	.	.	.	.	.	.	.	.
cost *	.	.	.	.	.	.	.	.	.
snorkelling	.	.	2.5	2.1	2.5	2.5	1.6	2.4	2.0
see rainforest	2.3	2.5	.	.	.	.	.	.	.
other sporting	.	.	.	.	.	2.7	2.1	.	.
visit country towns	2.6	3.2	3.1	2.7	2.7	.	.	.	.
nightlife&entertainment	.	.	.	.	.	2.9	2.6	.	.
historical places	2.6	3.2	3.2	2.6	2.8	.	.	.	.
visit friends & rels	.	.	.	.	.	.	.	.	.
go fishing	3.4	3.1	.	.	.	.	.	3.5	2.1
scuba diving	.	.	.	.	.	3.7	1.4	3.4	3.0
sugar *	.	.	3.7	3.7	3.4	.	.	.	.

*Question asked in August field trip only

Notes on Tables 9 and 10

(1) The number given is the mean response for that item using the categories: 1 very important, 2 somewhat important, 3 not very important, 4 not at all important. 'Don't Know' responses were treated as missing. A fifth category 'Not Relevant' has been included into the fourth category as it was not effectively used by respondents.

(2) Differences between groups for each independent variable were tested for significance by Analysis of Variance in SPSS-X Procedure Breakdown. Only where there are significant ($p < .05$) differences between groups are the means for each group provided. Spaces in the table represent no significant difference between groups i.e. the mean for each category is the same as the overall mean.

(3) All items except the first two are from Question 29 in the Interview Schedule (Appendix 2). The first two items are from Question 30 and use the same response code. The full wording of these questions are: 'How important was the Reef overall in attracting you to north Queensland for your holiday', and 'How important was seeing Coral and Marine Life in particular in attracting you to north Queensland for your holiday'. Respondents had been asked to listen to both questions before answering either question.

First Trip to north Queensland

First timers tended to place more importance on the items that emphasized discovery: something new, coral, nature walks, rainforest, country towns, and historical places. They also placed more importance on friendly people in terms of enjoyment of their holiday, and placed more importance on the reef, and coral and marine life, in attracting them to north Queensland for this holiday.

Return tourists tended to place more importance on the relaxation items, in particular, to get away from everything and fishing.

Previous Coral Experience

In terms of attracting tourists to north Queensland, the reef and coral and marine life was more important to tourists with coral experience in other places in the world, and then to tourists with no previous coral experience than it was to tourists with previous coral experience on the Great Barrier Reef.

Tourists with coral experience elsewhere in the world, and those with no coral experience, placed more importance on the discovery items. However, those with non Great Barrier Reef coral experience placed special importance on snorkelling.

Diver Status

Obviously divers place far greater importance on diving than do non-divers. However, divers also place more importance on all activities e.g. swimming, snorkelling, and other sporting activities. They also place more importance on social aspects of holidays, such as night life and entertainment, meeting people, and on friendly people.

Fishing Status

Fishers, as well as placing more importance on fishing and eating seafood, also place more importance than non-fishers on swimming and snorkelling. It appears that some of them are also divers. However, unlike divers they are less interested in the social aspects of holidays and more interested in relaxation, placing more importance on a natural environment, and to get away from everything, than non-fishers.

3.8 Worries About Visiting North Queensland

Respondents were asked whether there was anything that worried them about their holiday before they left home. Tourists to north Queensland were worried about a range of things (see Table 11), but for the most part these worries were concerns that travellers have irrespective of their destination (Pearce 1982). 30% of tourists had no worries, while 23% were worried about the weather.

The specific responses given were collapsed into a small number of general categories (Table 11). In addition to no worries and the weather, other concerns included the risks and insecurities of travelling (20%) and the actual travelling (19%). 5% of respondents were worried about things at home, 3% were worried about theft or losing things, 6% were worried about their health, and 7% were worried about dangerous animals e.g. stingers, insects, snakes. Essentially, tourists had no special concerns about coming to north Queensland. However, it is possible that certain tourist groups, such as those from particular countries, may have specific concerns that have not been identified due to the grouping of all international tourists together in this study.

Table 11 Worries About Visiting North Queensland (breakdown)

	OVERALL	SEASON		ORIGIN OF TOURIST			TOURIST STATUS				
		Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Main-land
		(column percentages, multiple responses)									
no worries	30	35	26	26	27	35	33	32	31	20	25
weather	23	25	22	37	29	12	22	24	21	34	5
risks	20	22	18	5	23	18	17	14	21	34	30
travel	19	19	19	16	20	18	20	18	18	14	40
dangerous animals	7	7	7	5	7	7	5	10	4	9	0
health	6	2	9	5	4	9	3	9	4	7	5
things at home	5	4	7	5	7	3	5	5	10	2	0
theft, loss	3	3	3	5	1	8	3	2	6	2	5
other people	2	0	3	0	2	2	5	0	1	0	5

	First trip	PREVIOUS CORAL EXPERIENCE				DIVER STATUS		FISHER STATUS	
		Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher
no worries	28	32	35	31	25	31	26	28	37
weather	18	29	28	19	22	23	22	24	20
risks	23	18	16	19	25	19	24	20	22
travel	22	15	12	23	22	18	26	18	22
dangerous animals	7	7	9	5	6	7	7	7	8
health	9	2	4	10	5	6	7	7	2
things at home	4	8	7	5	4	6	2	6	3
theft, loss	5	0	1	7	2	3	5	4	2
other people	2	2	1	2	2	2	0	2	2

390 responses, n = 331

Respondents were allowed up to 3 responses.
Mean number of responses per respondent was 1.2.
23 missing cases.

The factors affecting worries about visiting north Queensland were as follows:

Season

There were few differences in worries mentioned by respondents between winter and summer. No worries was given as a response more often in winter than in summer (35% vs 26%). Health was more of a concern for summer tourists than for winter tourists (9% vs 2%).

Origin of Tourist

International tourists were the most likely group to give no worries as a response (35% vs 27% for Australians and 26% for locals). They were the least likely to mention the weather (12%), whereas Australians (29%) and especially locals (37%) were very concerned about the weather.

Tourist Status

Day trippers and resort guests were more likely than campers or people interviewed on mainland locations to have no worries. Campers were the most concerned about the weather.

First Trip to north Queensland

Return visitors to the Reef were far more concerned about the weather than were first timers (29% vs 18%). First timers were more concerned than return visitors about travelling, risks, and health.

Previous Coral Experience

Tourists with previous coral experience were more likely than other tourists to have no worries. They also were more concerned about the weather.

Diver Status

There were no differences between divers and non-divers worthy of comment.

Fishing Status

There were no differences between fishers and non-fishers worthy of comment, except that fishers were more likely to have no worries.

3.9 Concerns About Animals, Insects And Marine Life

For the second field trip, tourists who did not include any animals in their list of worries about travelling to north Queensland were asked if they were worried about any animals, insects or marine life (see Table 12). This was in the form of an open ended question asking, 'Were you worried about any animals, insects or marine life?' 64% of all respondents stated that they were not worried about any animals, insects or marine life.

By adding the responses of those who mentioned some form of dangerous or nuisance life in response to the previous question about worries about coming to north Queensland to the responses to this question, a total of 36% of tourists mentioned some form of dangerous or nuisance life.

The most feared is the marine stinger with 23% of all tourists being concerned about them. Other poisonous fish and marine life were the concern of 11% of tourists, while 7% of tourists were worried about snakes and lizards. 5% were concerned about the amount of insects. Two respondents mentioned that they were worried about hitting kangaroos with their car. Australians (27%) and locals (21%) were more concerned than international tourists (18%) about stingers. Stingers were also mentioned more often by return tourists than by first timers (29% vs 20%).

A breakdown of responses to this question will not be provided because of the small number of concerns about dangerous animals. The results of further analysis provide little meaningful information in any case, reflecting the effect of knowledge of the various organisms.

Table 12 Concerns About Animals, Insects And Marine Life

Responses	% of respondents giving this response
not worried	63.7
stingers	22.9
poisonous fish, marine life	10.6
snakes lizards	6.7
insects	5.0
hitting kangaroos with car	1.1
other animals	2.2

201 responses, n = 179

Respondents were allowed up to 3 responses.
Mean number of responses per respondent was 1.1.
Question was only asked in the Summer field trip.
5 missing cases.

3.10 Degree of Concern about Potentially Dangerous or Unpleasant Aspects of North Queensland

In addition to an open ended question measuring concern about animals, insects and marine life, tourists were also asked to rate how concerned they were about a series of potentially dangerous or unpleasant aspects of north Queensland (see Table 13).

It is clear that there is little concern about the potentially dangerous or unpleasant items that were included. Bad weather was the item that attracted the most concern, although this item still only averaged halfway between somewhat concerned and not very concerned (see Table 14).

The response categories used differed between the summer and winter field trips. In the second trip (Summer), there was an attempt to refine the responses further so as to distinguish between tourists who had some degree of concern and those who had no concern at all and for what reason. It is possible that some tourists would not know of the threat posed by the item, that they did not consider it (as opposed to not being concerned about it), that they knew that the item was not relevant to their destination, or that they may have been concerned originally but investigated the issue and found it to be safe.

Although, respondents were handed a card on which these categories were listed, these response categories failed to adequately record the respondent's degree of concern. The interviewers reported that respondents failed to make use of these additional categories even when it seemed from other comments they were making that they should have. For detailed analysis (as in Table 14) all additional categories have been included in the 'not at all concerned' response.

Ciguatera was included in the first trip. The interviewers reported that many respondents did not know what it was. The interviewers provided a brief description of ciguatera. Unfortunately, this was not a standardized response. Respondents then tended to reply that they were either 'not very concerned' or 'not at all concerned' about ciguatera. Unfortunately, it is this response that the interviewers have tended to record, not the fact that the respondent did not know of it. Since interviewers were not consistent in their description of ciguatera, this item is unreliable, and responses suffer from potentially considerable interviewer effect.

Lack of knowledge of ciguatera is likely to be considerable. A study of fish consumption in 1600 households in the Moreton Region, south-east Queensland, revealed that only 30% were able to correctly identify what ciguatera was. 56% had not heard of the term, and 14% gave a wrong description of it (Bandaranaike, Neumann & Hundloe 1984, p.77). With a tourist population consisting of southerners and international tourists, it is likely that the level of knowledge of ciguatera would be lower for this sample.

Ciguatera and seafood poisoning are perceived in different ways by respondents. Respondents who know of ciguatera will respond to this when questioned about seafood poisoning. Respondents who do not know about ciguatera will regard seafood poisoning like other forms of food poisoning and respond accordingly. Since food poisoning is not likely to be of concern to tourists to Australia, it may be expected that seafood poisoning would record a lower rating than ciguatera, when the rating for ciguatera only includes those who know what it is. The fact that ciguatera has a higher rating than seafood poisoning in this study (from Table 14, 3.4 vs 3.7), gives some indication of the degree of interviewer effect on this item.

There are other factors which could potentially contribute to this difference, including: the magnitude of the difference between the 'true' ciguatera response and the 'true' seafood response; the proportion of respondents who actually did know of ciguatera; and differences in this proportion and the degree of concern for ciguatera and seafood poisoning between the summer and winter seasons.

It maybe not necessarily be true that ciguatera will record a higher response than seafood poisoning, either. Many dedicated fish eaters who know of ciguatera may take a fatalistic attitude about the risk involved in eating fish. Such an attitude is represented by comments such as 'I'm not prepared to give up eating fish ... I'm not really concerned about it ... If I catch it, I catch it ... The fish is too good and it's worth the risk'.

Some degree of cognitive dissonance also applies with other hardened fish eaters who consider that they have ways of detecting infected fish, some with little scientific basis. Examples of this are given by comments such as: 'You can tell by the smell of the fish', 'You can tell by the way they look', 'After you have been around for a while you know where the danger spots are and you don't fish there', 'It only affects certain species', 'Just don't eat oversize fish'.

The effect of these attitudes of cognitive dissonance and fatalism is that some respondents, although they are well aware of ciguatera, are not concerned about it. This could result in the response for ciguatera being lower than would otherwise be expected, and could result in the response for ciguatera given only by respondents who knew of ciguatera being lower than the response for seafood poisoning as given by everyone.

Because of the problems associated with both the ciguatera and seafood poisoning items, little attention should be paid to the results for these items. Further research on these items is required if they are to be regarded as important issues.

Table 13 Degree Of Concern About Potentially Dangerous Or Unpleasant Aspects Of North Queensland

	very conc	some what conc	not very conc	not at all conc	found safe	not relv	did not cons	did not know	don't know	total	n
	(row percentages)										
bad weather	17	32	21	23	1	1	6	0	0	100	333
too many people	7	22	24	29	1	1	17	1	0	100	332
marine stingers	7	19	17	29	2	1	14	7	3	100	332
stonefish	6	19	22	24	1	2	15	11	1	100	333
snakes	5	14	19	30	1	2	23	1	5	100	332
sharks	5	14	18	29	1	3	22	0	7	100	333
ciguatera	4	14	20	30	-	-	31	1	-	100	156 *
coral poisoning	2	17	24	28	1	2	14	10	1	100	333
cyclones	2	8	17	33	1	2	28	2	6	100	333
crown of thorns	2	5	12	28	1	2	30	15	6	100	333
crocodiles	2	4	14	40	0	8	28	2	2	100	333
seafood poisoning	2	2	16	44	0	5	29	2	0	100	179 **
cane toads	1	4	8	37	1	5	29	14	3	100	333
stinging plants	0	4	11	31	-	-	38	15	-	100	156 *

NOTE:

*	Trip 1 only
**	Trip 2 only
conc	concerned
found safe	investigated and found to be safe
not relv	not relevant
cons	consider
did not know	respondent did not know about that item

The response categories were different for each season.
 Response categories for the Summer Questionnaire are displayed.
 In Winter, Found Safe, Not Relevant, and Don't Know were not included.
 These categories have been collapsed in any further analysis.

Table 14 (A) Degree Of Concern About Potentially Dangerous Or Unpleasant Aspects Of North Queensland

(Breakdown)

[illegible]

Table 14 (B) Degree Of Concern About Potentially Dangerous Or Unpleasant Aspects Of North Queensland

(breakdown)

	First trip	PREVIOUS CORAL EXPERIENCE				DIVER STATUS		FISHER STATUS	
		Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher
bad weather	2.8	2.5	.	.	.	.	.	.	.
too many people	3.2	2.8	.	.
marine stingers
stonefish	3.3	2.9
coral poisoning	3.4	3.1	.	.
snakes
sharks	3.4	3.1	.	.
ciguatera *
cyclones	3.7	3.6
crown-of-thorns
crocodiles
seafood poisoning**	3.8	3.5
cane toads
stinging plants *	.	.	3.9	3.9	3.7	.	.	.	.

* Trip 1 only

** Trip 2 only

The number given is the mean response for that item using the categories: 1 very concerned, 2 somewhat concerned, 3 not very concerned, 4 not at all concerned. All other responses categories used in Table 13 e.g. investigated and found to be safe, not relevant, did not consider, did not know about it, and don't know, have been recoded as being equivalent to not at all concerned. This has been done because not all categories were used on each field trip, and there is some doubt that the respondents used these categories meaningfully. The smaller the number therefore, the more concerned that group of people are about that item.

Differences between groups for each independent variable were tested for significance by Analysis of Variance in SPSS-X Procedure Breakdown. Only where there are significant (p<.05) differences between groups are the means for each group provided. Spaces in the table represent no significance difference between groups, ie the mean for each category is the same as the overall mean.

The factors affecting the degree of concern about potentially dangerous or unpleasant aspects of north Queensland were analysed with the following result.

No item included in the list of potentially dangerous or unpleasant aspects of north Queensland was of great concern. Bad weather was the item that gave most concern, still rating only halfway (2.6) between somewhat concerned and not very concerned. Although a number of differences between the various groups of tourists were discovered, interpretation must be from the basis that most items are of no overall concern to tourists, and only a few respondents are very concerned or even somewhat concerned about them.

Season

There were a number of differences between summer and winter. Winter respondents were more concerned about the weather than were Summer respondents (2.4 vs 2.8). They were also more concerned about stonefish (2.8 vs 3.6), coral poisoning (3.1 vs 3.6) and cane toads (3.7 vs 3.9).

Summer respondents were more concerned about marine stingers (3.1 vs 3.3) and sharks (3.1 vs 3.6) than were winter visitors.

Origin of Tourist

Locals, who tended to be on short holidays or weekends, were the most concerned about the weather (2.2), compared to 2.5 for Australians, and 3.0 for international tourists.

Tourist Status

Campers were the group most concerned about too many people (2.7 compared to the overall average of 3.1). They were also the group most concerned about stonefish (2.7, overall average 3.2).

There was also significant but minor differences amongst the various categories of tourists for crocodiles and cane toads (see Table 14).

First Trip to north Queensland

The only significant difference was that tourists on return visits were more concerned about bad weather than first timers (2.5 vs 2.8).

Previous Coral Experience

Tourists with no coral experience did record a significant but trivial greater concern about stinging plants (3.7 vs 3.9).

Diver Status

Divers were more concerned than non-divers about too many people (2.8 vs 3.2), coral poisoning (3.1 vs 3.4), and sharks (3.1 vs 3.4).

Fishing Status

Fishers were more concerned than non-fishers were about stonefish (2.9 vs 3.3), cyclones (3.6 vs 3.7), and seafood poisoning (3.5 vs 3.8).

3.11 Limiting Factors In Choice Of Holiday Destination

For the first field trip, tourists were asked what factors limited their choice of holiday destination (Table 15). The majority of responses given were either money, given by 63% of respondents, or time, given by 40% of respondents. These two responses comprised 73% of all responses in the Winter field trip. It was decided, therefore, to change the wording of the question for the Summer field trip to 'Apart from time and money what factors limit your choice of holiday destination' for the Summer field trip (Table 15).

Table 15 Limiting Factors In Choice Of Holiday Destination

Responses	% of respondents giving this response	
	Winter	Summer
money *	63	-
time *	40	3
nothing	7	38
work commitments	9	15
environmental factors	1	15
climate	6	5
politics	3	8
school holidays	9	2
other commitments	1	7
hygiene	1	6
lack of motivation	1	5
distance	2	4
crime	1	3
facilities for children	1	1
value for money	1	1
opportunity	1	0
recreational facilities	0	1
health	0	1
avoiding school holidays	1	0
total responses	238	208
number of cases	164	182
mean number of responses	1.4	1.1
missing cases	6	2

Respondents were allowed up to 3 responses.

* In the Summer field trip the question was phrased, 'Apart from time and money what factors limit your choice of holiday destination'.

'Nothing' was the response of 38% of the Summer respondents. Work commitments was given by 15% of Summer respondents, and environmental factors was also given by 15%. Politics was given by 8%, hygiene by 6%, climate by 5%, distance 3%, crime 3%, and a number of other responses like other commitments, facilities for children, school holidays etc.

Because so few responses other than time and money were given in the Winter field trip, further analysis has only been conducted on the responses from the Summer field trip (Table 16).

Factors affecting limiting factors in choice of holiday destination were as follows:

Origin of Tourist

Australians were the most likely to give Nothing as their response to this question (47% vs 33% local, 28% international). International tourists were the most likely to give politics (17%) as a limiting factor in their choice of holiday destination, compared to 1% of Australians and 0% of locals.

The unstructured interviewing revealed that especially for Americans, Australia would become an increasingly popular tourist destination because it is regarded as a safe location in the light of terrorist attacks on American tourists in Europe. Other factors, including the increasing interest in Australia in the US, and a change in the character of American holidays to become increasingly environment orientated, have also contributed to the rising levels of American tourism in Australia.

This is also indicated in the high percentage of international respondents giving environmental factors (including climate) as a limiting factor (27% vs 13% local, 12% Australians). International tourists were not particularly concerned about distance (4% vs 2% of Australians, 7% locals), or about risks involved in travelling (8% vs 8% Australians, 13% locals). However, this is partly due to the fact that the international tourists tend to be middle aged to elderly, whereas many of the Australians and locals have young families to worry about.

Tourist Status

Campers were the group most limited by environmental factors (41%). 76% of campers were also limited by money, but this group tended to be less affected by time (32%).

First Trip to north Queensland

There was little difference between first timers and return visitors that is not accounted for by origin of tourist.

Previous Coral Experience

There were no differences worthy of comment.

Diver Status

There were no differences worthy of comment.

Fishing Status

There were no differences worthy of comment.

Table 16 Limiting Factors In Choice Of Holiday Destination (breakdown)

	SEASON		ORIGIN OF TOURIST			TOURIST STATUS					
	OVERALL	Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Main-land
	(column percentages, multiple responses)										
money * WINTER	63			33	65	59	61	57	49	76	100
time * ONLY	40			67	34	54	45	46	36	32	29
nothing	38			33	47	28	40	44	38	18	33
envnmental factors	19	SUMMER		13	12	27	11	11	23	41	33
work commitments	15			13	19	12	14	18	15	9	17
personal factors	13			20	10	15	9	11	17	18	17
travel risks	8	ONLY		13	8	8	9	10	10	0	0
politics	8			0	1	17	3	4	17	4	17
distance	3			7	2	4	3	6	2	0	0
children	3	(see text)		7	4	1	3	1	2	14	0
other	2			7	1	3	9	1	0	0	0
	PREVIOUS CORAL EXPERIENCE					DIVER STATUS		FISHER STATUS			
	First trip	Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher		
money * WINTER	69	57	58	66	66	62	67	63	63		
time * ONLY	49	30	31	51	41	38	57	41	39		
nothing	40	36	30	29	50	39	32	39	30		
envnmml factors	21	15	12	27	18	18	22	18	22		
work commitments	11	24	25	14	10	16	14	14	22		
personal factors	13	12	18	15	8	12	16	11	30		
travel risks	7	8	7	15	4	8	11	8	9		
politics	11	3	4	21	1	8	8	9	0		
distance	4	2	2	2	5	3	5	4	0		
children	2	5	5	0	4	3	3	4	0		
other	1	3	5	2	0	2	3	2	4		

3.12 Tourists' Future Enjoyment Of The Reef

Respondents were asked what things might reduce their enjoyment of the Reef in the future (Table 17). The thing that concerned most tourists in terms of reducing their enjoyment of the Reef in the future was over-development or over-commercialization (29%). 22% of tourists were not sure or didn't think anything would affect their enjoyment of the Reef in the future. Other tourists were concerned about the destruction of coral (18%), too many people (17%), and pollution (11%). These five responses represent 76% of all responses. A range of other responses comprise the remaining 24% of responses (see Table 17). These five major responses have been further analysed in Table 18.

Table 17 Tourists' Future Enjoyment Of The Reef

Responses	% of respondents giving this response
over developed, too commercial	28.8
don't know, nothing	21.7
destruction of coral	17.8
too many people	16.6
pollution	10.7
Crown of Thorns	5.9
bad weather	5.0
increased costs	4.7
oil exploration, mining	2.4
insects, dangerous animals	2.4
heat, weather	2.1
reduced freedom constraints	1.2
if wasn't protected	1.2
travel distances	1.2
if fished out	0.9
personal over-familiarity	0.9
sea sickness	0.6
overuse	0.6
too many foreign tourists	0.3
atomic tests in the Pacific	0.3
dead marine life	0.3
helicopters	0.3

424 responses, n = 337

Respondents were allowed up to 3 responses.

Average number of responses per respondent was 1.3.

17 missing cases.

Table 18 Tourists' Future Enjoyment Of The Reef

(breakdown)

	OVERALL	SEASON		ORIGIN OF TOURIST			TOURIST STATUS				
		Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Main-land
		(column percentages, multiple responses)									
over commercializtn	29	31	27	11	28	33	27	33	22	27	37
don't know, nothing	22	20	23	11	25	18	20	22	30	13	11
destn of coral	18	13	22	21	20	14	23	17	12	18	26
too many people	17	19	15	26	13	22	18	10	19	27	26
pollution	11	7	14	26	10	10	5	13	9	18	5

	First trip	PREVIOUS CORAL EXPERIENCE				DIVER STATUS		FISHER STATUS	
		Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher
over commercializtn	30	30	25	34	28	30	24	29	27
don't know, nothing	24	20	17	15	32	23	16	22	21
destretn of coral	15	21	22	19	14	15	29	15	29
too many people	16	16	22	18	11	15	22	15	24
pollution	9	11	15	9	8	10	16	11	10

NOTE: Only responses which have been given by more than 10% of respondents are included.

Factors affecting tourists' future enjoyment of the reef can be described as follows.

Season

There were no differences worthy of comment.

Origin of Tourist

International tourists were more likely to be concerned about over-commercialization (33%) than were Australians (28%), and least of all, locals (11%). However, locals were concerned about too many people (26%) compared to international tourists (22%) and Australians (13%), and about pollution (26%), compared to international tourists and Australians (10% each).

Surprisingly, despite the increased interest of international tourists in coral over the interest shown by locals and Australians, international tourists were least likely to respond that the destruction of coral would reduce their enjoyment of the reef in the future. This is partly because for most international tourists, the question is hypothetical, they do not plan to return to north Queensland, but is also related to their lack of knowledge of problems affecting the reef, such as the crown-of-thorns starfish, relative to Australians and locals (Hundloe, Vanclay & Carter 1987).

Tourist Status

The response, over-commercialization was uniformly high across all categories of tourists. It was the most frequent response for all categories except for day trippers for whom 'Don't Know, nothing' was the most frequent response. Resort guests were the least likely to respond too many people.

First Trip to north Queensland

There were minimal differences between the responses of first timers and repeat visitors to the reef.

Previous Coral Experience

As for the responses for origin of the tourist, tourists who have coral experience elsewhere in the world were the most likely to be concerned about over commercialization (34%) compared to tourists with previous experience on the Great Barrier Reef (25%) and to those with no previous coral experience (28%).

Tourists with no previous coral experience were the most likely to respond don't know, nothing (32%), compared to tourists who have previous Great Barrier Reef experience (17%) and to tourists who have coral experience elsewhere in the world (15%). They were the least likely to list the destruction of coral and too many people as things that might reduce their enjoyment of the reef in the future.

Diver Status

Divers were primarily concerned about the destruction of coral (29% vs 15%). Divers were also more concerned than non-divers about too many people (22% vs 15%), and about pollution (16% vs 10%). Non-divers were more concerned than divers about over-commercialization (30% vs 24%), and were more likely to respond that nothing would reduce their enjoyment (23% vs 16%).

Fishing Status

Like divers, fishers were primarily concerned about the destruction of coral (29% vs 15% for non-fishers). They were also more likely to be concerned about too many people in the future (24% vs 15%).

3.13 Awareness Of Problems Facing The Reef

Respondents were asked whether they were aware of any problems or threats to the survival of the Reef.

Tourists were relatively well aware of a number of problems facing the Reef (Table 19). Only 31% were either not aware of any problems or thought that there were no problems facing the Reef. 49% of tourists gave the crown-of-thorns starfish as a problem. Other problems included pollution (12%), too many tourists (9%), human destruction of the Reef in general (9%), oil drilling (6%) and mining (3%), commercialization (4%), silt from the Daintree Road (3%), cyclones (2%), tourists walking on the Reef (2%), becoming fished out (2%), the Queensland Government (1%), chlorine from swimming pools (1%), and erosion of the island (Green Island) (1%). Chlorine from swimming pools was mentioned by two tourists who were on trips out of Port Douglas. They had read a local newspaper story about how the proposed discharge of water from the swimming pool at the Sheraton Hotel Port Douglas may affect the Reef.

Further analysis of these results is not warranted. Analysis of responses relating to the crown-of-thorns starfish is provided in Hundloe, Vanclay and Carter (1987) and in Vanclay (1987). There are not sufficient responses to other problems to warrant further investigation.

Table 19 Awareness Of Problems Facing The Reef

Responses	% of respondents giving this response
crown-of-thorns	49.0
not aware of any, none	31.2
pollution	11.6
too many tourists	9.2
human destruction in general	8.6
oil drilling	5.6
mining	3.0
commercialization	3.6
silt from Daintree road	2.7
cyclones	2.4
walking on it	2.1
fishing	2.1
Qld Government	1.2
swimming pool chlorine	0.6
island erosion (Green Island)	0.3

448 responses, n = 337

Respondents were allowed up to 3 responses.

Average number of responses per respondent was 1.3.

17 missing cases.

3.14 Management Of The Reef And Holidays

Some issues relating to the management of the Reef were raised in a series of questions about holidays and the Great Barrier Reef in general (Tables 20-23). Responses to the items were recorded on a five point Likert scale with response categories consisting of: 1 strongly agree, 2 agree, 3 neither agree nor disagree, 4 disagree, 5 strongly disagree. Don't know responses were treated as missing.

The importance of relaxing was reinforced with most tourists either agreeing or strongly agreeing that, 'When I go on holidays I just like to relax and take things easy', which scored a mean response of 1.9 (Table 22). International tourists had the lowest mean score (2.3) indicating that they tended to agree or neither agreed or disagreed, while Australians (1.7) and locals (1.8) tended to agree or strongly agree.

While relaxing has been an important theme in many responses to many questions, respondents tended to disagree with the item, 'I like to spend my holidays at a place where there is plenty of night life and excitement' (Table 22), with this item having a mean response of 3.6. There was no statistical difference in this response between local, domestic or international tourists, although locals tended to be more in disagreement with this item.

Respondents were equally divided in opinion on whether they thought that the Reef was too developed already (2.9) (Table 22). Campers tended to agree that the Reef was too developed (2.3), however resort guests were also slightly inclined to agree (2.9). By contrast, day trippers tended towards disagreeing (3.3) that the reef was too developed, even though a number of day trippers complained that they were treated as second class citizens on some of the resort islands.

There was fairly uniform disagreement that there should be more commercial development in the Reef area (4.0) (Table 20). International tourists were slightly more opposed to more development (4.2) than were Australians (3.9) or locals (3.8).

Finally, there was uniform, across the board, strong agreement that, 'There should be very strict controls to stop people harming the Reef in any way' (1.3) (Table 20).

Table 20 Management Of The Reef And Holidays 1 (Questions asked on both trips.)

	OVERALL	SEASON		ORIGIN OF TOURIST			Reef Day Trip	TOURIST STATUS			
		Winter (cell means)	Summer	Local	Aust	over- seas		Resort Guest	Island Day Trip	Camper	Main- land
* There should be very strict controls to stop people harming the reef in any way.	1.3	.	.	.	.	.	.	.	.	.	.
* Coral and marine life on the GBR is truly beautiful.	1.5	1.7	1.3	1.3	1.6	1.4	1.4	1.7	1.4	1.2	1.8
* NQ Rainforests should be saved.	1.5	1.5	1.4	.	.	.	.	.	.	.	.
* The Reef is one of the greatest wonder of the world.	1.6	1.7	1.5	.	.	.	.	.	.	.	.
* Rainforests are an important tourist attraction for NQ.	2.0	.	.	1.7	1.9	2.2	.	.	.	.	.
* I had been led to believe that coral was more colourful than it really is.	3.1	3.2	3.0	.	.	.	.	.	.	.	.
* I can relax as much at home as I can on holidays away from home.	3.6	3.9	3.4	3.1	3.9	3.2	3.4	4.0	3.3	3.2	4.1
* There should be more commercial development in the reef area.	4.0	.	.	3.8	3.9	4.2	3.8	4.0	3.8	4.3	4.1

Items are from the list of items included in Question 43.

The number given is the mean response for that item using the response codes: 1 strongly agree, 2 agree, 3 neither agree nor disagree, 4 disagree, 5 strongly disagree. 'Don't Know' responses were treated as missing.

Differences between groups for each independent variable were tested for significance by Analysis of Variance in SPSS-X Procedure Breakdown. Only where there are significant ($p < .05$) differences between groups are the means for each group provided. Spaces in the table represent no significant difference between groups, i.e. the mean for each category is the same as the overall mean.

Table 21 Management Of The Reef And Holidays 2 (Questions asked on both trips.)

	First trip	PREVIOUS CORAL EXPERIENCE				DIVER STATUS		FISHER STATUS	
		Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher
		(cell means)							
There should be very strict controls to stop people harming the reef in any way.
Coral and marine life on the GBR is truly beautiful.
NQ Rainforests should be saved.
The Reef is one of the greatest wonder of the world.
Rainforests are an important tourist attraction for NQ.	.	.	1.9	2.2	2.1	.	.	.	.
I had been led to believe that coral was more colourful than it really is.
I can relax as much at home as I can on holidays away from home.	3.4	4.0	.	.	.	3.7	3.3	.	.
There should be more commercial development in the reef area.

See notes for Table 20.

Table 22 Management Of The Reef And Holidays 3 (Items asked on one trip only.)

	OVERALL	ORIGIN OF TOURIST			Reef Day Trip	TOURIST STATUS			
		Local	Aust (cell means)	over- seas		Resort Guest	Island Day Trip	Camper		Main- land
TRIP 1									
It is important to have a change from the home environment while on holidays.	1.6	.	.	.	.	.	.	.	.
When I go on holidays I just like to relax and take things easy.	1.9	1.8	1.7	2.3	.	.	.	.	.
When I go on holiday, going to a place with a warm sunny climate is generally very important to me.	2.0	.	.	.	.	.	.	.	.
Rainforests in NQ are among the best in the world.	2.3	2.0	2.2	2.7	.	.	.	.	.
I think that the Reef is too developed already.	2.9	.	.	.	3.3	2.9	3.3	2.3	2.6
Without the reef NQ would be just like anywhere else.	3.2	.	.	.	.	.	.	.	.
I like to spend my holidays at a place where there is plenty of nightlife and excitement.	3.6	.	.	.	.	.	.	.	.
TRIP 2									
The GBR is an important tourist attraction for NQ.	1.3	.	.	.	.	.	.	.	.

Table 23 Management Of The Reef And Holidays 4 (Items asked on one trip only.)

	First trip	PREVIOUS CORAL EXPERIENCE Return visit	GBR exp	other place	No exp	DIVER STATUS Non Diver	Diver	FISHER STATUS Non Fisher	Fisher
			(cell means)						
TRIP 1									
It is important to have a change from the home environment while on holidays.	.	.	.	.	.	.	.	.	.
When I go on holidays I just like to relax and take things easy.	2.1	1.7	.	.	.	.	.	.	.
When I go on holiday, going to a place with a warm sunny climate is generally very important to me.	.	.	.	.	.	.	.	.	.
Rainforests in NQ are among the best in the world.	2.5	2.1	2.0	2.3	2.6	.	.	2.4	2.0
I think that the Reef is too developed already.	.	.	2.7	2.9	3.2	.	.	3.1	2.6
Without the reef NQ would be just like anywhere else.	3.3	3.0	2.9	3.3	3.4	.	.	.	.
I like to spend my holidays at a place where there is plenty of nightlife and excitement.	3.4	3.8	3.9	3.5	3.3	.	.	.	.
TRIP 2									
The GBR is an important tourist attraction for NQ.	.	.	1.5	1.2	1.2	.	.	1.3	1.5

3.15 Tourists' Perceptions Of Coral

Although the sampling strategies employed were designed to capture tourists who were likely to have seen coral, at the time of interviewing, 37% of respondents had not yet seen coral on this holiday. However, 63% of these people who had not yet seen coral intended to see coral later in their holiday.

Reasons given by the 49 people (14%) who have not seen coral on this trip and who do not intend to see coral include: that they have seen it before, the cost of excursions, that they do not have enough time, and that they are not interested. These people tend to be locals or other Australians who have previously been to north Queensland. However, 14 respondents had no previous coral experience. In other words, 4% of all respondents did not have previous coral experience and did not intend to see coral on this trip. 12 of these tourists were resort guests on Dunk Island (4), Hinchinbrook Island (4), Great Keppel Island (3) and South Molle Island (1). One was a day tripper to Green Island, the other was interviewed on the mainland at Shute Harbour.

Several questions were asked at various places in the questionnaire to measure the tourists' perceptions of coral, and the importance of coral in terms of their holiday. Most of these items are related to opinions on the importance of coral, in terms of the respondent's holiday, and do not necessarily require the respondent to have seen coral.

Tourists reasons for visiting north Queensland, their likes about north Queensland, and their best experience can be analysed for responses relating to the reef.

*The Library
Great Barrier Reef
Marine Park Authority
P.O. Box 1379
Townsville, 4810*

Although only 22% of all respondents gave reasons directly related to the Reef in response to an open ended question on why they came to north Queensland for their holiday (see Table 4), coral viewing does appear to be an important part of holidays when tourists were directly questioned how important coral viewing was in terms of their enjoyment of this holiday. 40% stated that coral viewing was very important, with a further 33% stating that coral viewing was somewhat important.

In interpreting these results, it is important to bear in mind that the survey population for this study was Reef tourists, not north Queensland tourists. Therefore, the importance of the reef will be higher for this study than for north Queensland tourists in general.

In addition to the item measuring how important coral viewing is in terms of the enjoyment of this holiday, two items were included to measure the importance of the reef and coral and marine life in attracting the tourists to north Queensland for their holiday (Table 9). Over 92% of respondents either agreed or strongly agreed that 'Coral and marine life on the Great Barrier Reef is truly beautiful'. This item scored a mean of 1.5 in Table 20. Only two individuals disagreed with this statement.

The item 'The Reef is one of the greatest wonders of the world', had similarly high levels of agreement scoring a mean response of 1.6. Of tourists who had seen enough coral on this holiday to comment on it, 50% thought the coral was as good as they expected, 26% were disappointed, and 24% thought the coral was better than they expected. Comments given revealed that many tourists were a little disappointed by coral per se, but the colour and abundance of fish more than compensated for the lack of colour in coral.

The preliminary unstructured interviewing indicated the presence of such a 'fish effect'. Comments were also made by some tourists indicating that glossy books and television programs overstate the beauty and colour of coral. Tourists who have high levels of exposure to media images of coral may be disappointed in the failure of the reality to match their preconceived images.

Such a hypothesis was considered by the inclusion of the item, 'I had been led to believe that coral was more colourful than it really is' (Table 20). This item scored a mean response of 3.1, with a standard deviation of 1.1, indicating considerable variation in responses.

3.16 Importance Of The Reef In Terms Of This Holiday

These items and others have been incorporated into two scales measuring the importance of coral and the reef in terms of this holiday. One scale, referred to as Reefness, consists only of items that can be answered by all respondents, whether or not they have seen coral, while the other scale, Coralness, contains items that can only be answered by tourists who have seen coral. Both scales measure the importance of the reef in terms of the tourist's holiday.

The scales were subject to scaling analyses involving factor analysis, cluster analysis and other techniques. (Appendix 3 has details of the derivation of the scales.)

The final scales comprise the following items:

REEFNESS (to apply to all respondents)

Q 43 Item 1 (beauty)

Q 43 Item 2 (world wonders)

Q 30 (a) (importance of reef in holiday)

Q 29 IMP 4 (importance of seeing coral)

REASON (reef given as a reason for coming to north Queensland)

CORALNESS (to apply only to respondents who have seen coral)

All the REEFNESS items plus the following:

LIKE (reef given as a liked feature of north Queensland)

BEST (reef mentioned in relation to best experience)

Q 21 (coral perception)

Q 43 Item 9 (coral colour)

The scales were expressed in percentages for ease of interpretation. This involves expressing the value obtained by summing the values of the items included in the scale (which have been appropriately scored and reverse ordered where necessary) for each respondent, in terms of a percentage of the maximum value that could have been obtained. The potential range of each scale is then 0 to 100, where 0 represents no answer given relating to the reef, and 100 represents all answers relate to the reef. As a percentage figure, the final score for each respondent represents the proportion of the total responses that could be given relating to the reef that were given by that respondent.

For the Reefness scale, the minimum value obtained was 22, the maximum 100, with a mean of 67, and a standard deviation of 18. The Coralness scale had a minimum of 16, a maximum of 97, a mean of 58, and a standard deviation of 17.

These scores indicate high levels of Reefness for reef tourists i.e. that the reef is important in their holiday, but there is considerable variation in the importance of the reef to different tourists.

It is important to consider that procedures used in development of ad hoc scales such as this scale are somewhat arbitrary. The resultant figures are useful but have no meaningful metric, and are best used to make comparisons between groups rather than as general indicators. Care should be taken not to 'over-interpret' such results.

3.17 Differences Between Types Of Tourists

International tourists had the highest levels of Reefness, i.e. the reef was more important to international tourists than it was to locals or other Australians. In fact, international tourists as a group, had the highest level of Reefness of any identified group of Reef tourists (see Table 24). Measured on the larger scale for those who had seen coral, international tourists are second only to divers in the importance of the reef in terms of their holiday.

Day trippers and campers had significantly higher levels of Reefness than did resort guests or those interviewed at mainland locations.

First timers gave more importance to the reef than did return tourists.

Tourists with coral experience in other places in the world had higher levels of Reefness than did tourists with previous experience on the Great Barrier Reef, and those with no previous coral experience.

As would be expected, divers had much higher levels of Reefness and Coralness than did non-divers.

Table 24 Importance Of The Reef In Terms Of The Tourist's Holiday

	SEASON			ORIGIN OF TOURIST			TOURIST STATUS				
	OVERALL	Winter	Summer	Local	Aust	over-seas	Reef Day Trip	Resort Guest	Island Day Trip	Camper	Mainland
		(cell means)									
REEFNESS	67	.	.	65	62	75	71	61	70	72	63
CORALNESS	58	.	.	61	54	62	.	.	.	.	.

	First trip	PREVIOUS CORAL EXPERIENCE				DIVER STATUS		FISHER STATUS	
		Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher
REEFNESS	70	62	63	73	65	65	73	.	.
CORALNESS	60	54	.	.	.	56	64	.	.

3.18 Measuring The Quality Of Coral

Information about reefs visited by respondents was used in conjunction with information available on reef quality to determine whether tourists are affected by the quality of coral.

Most of the popular coral reefs have been classified into three groups in terms of the quality of the coral measured by the amount of live coral cover (AIMS 1986). The coral is rated: (1) poor quality and much dead coral; (2) moderate quality coral; and (3) good live coral (see Table 25).

Each respondent was allocated the score of the reef with the best coral (amongst the classified reefs) for the reefs they had seen on this trip. Of the 209 tourists who provided information about the reefs they had visited this trip, 2 gave non-specific general locations, 2 gave reef names that could not be identified, and 26 (12%) tourists had been to reefs that have not been classified. Of these 30 tourists, 13 had also been to reefs that have been classified, and were given the rating of the highest classified reef they had been to. There were 17 tourists (8% of those who gave reef information) for whom a quality rating could not be given and were given a missing value. Tourists who had not seen any coral were also given a missing value.

Out of the total sample of 354, there were 133 tourists who had not yet seen coral. A further 12 did not provide details of reefs visited, mostly because they could not remember locations visited. 17 were given a missing value because they had only been to reefs that have not been classified by AIMS. 74 tourists had only seen poor quality coral, 38 had seen moderate quality coral, and 80 had seen high quality coral.

The AIMS rating of the quality of coral is based on the amount of live coral cover. A problem with such a measure is that it is not a measure of the aesthetic nature of the reef as obtained by the tourist. Many factors contribute to the viewing quality of the reef, including the amount of sunshine, wind, currents, turbidity of the water, and the cleanliness of the viewing surfaces (i.e. the glass in the glass bottom boat, or semi-submersible). The affect state (mood) of the tourist probably also contributes to the quality of the coral as perceived by the tourist (see Pearce 1982).

However, in the absence of any other data, this measure is the best that is available. Despite its shortcomings, if patterns are to occur in this data, then it is likely that they may exist in reality. If regarded to be important, further research can examine this specific problem more closely.

Table 25 Reefs Visited, Cost Of Tickets And Quality Of Coral

Common Name	Reef code (AIMS)	No of Tourists visiting (survey data)	COT rating	Coral rating	year of data	nearest port	1986 adult ticket cost (\$)
Green Island	16049	56	1	1	1985	Cairns	35
Agincourt Reef	15099	33	1	3	1984	Port Douglas	60
Low Isles	16028	22	1	2	1985	Port Douglas	35
Beaver Cay	17051	21	1	1	1984	Mission Beach	60
Hastings Reef	16057	15	1	2	1985	Cairns	65
John Brewer Reef	18075	11	3	1	1985	Townsville	65
Lady Musgrave Is	23082	10	1	3	1985	Gladstone	65
Michaelmas Cay	16060	10	1	3	1985	Cairns	65
North West Island	23049	10	1	2	1985	Gladstone	120
Great Keppel Island	23012	9	no data			Yeppoon	35
Heron Island	23052	9	1	3	1985	Gladstone	130
Hardy Reef	19135	8	1	3	1984	Shute Harbour	65
Whitsunday group	200	*	no data			Shute Harbour	60
		6					
Masthead Island	23069	5	1	0	1978	Gladstone	60
Hook Island	20028	*	1	3	1984	Shute Harbour	60
		4					
Fitzroy Island	16054	4	1	3	1984	Cairns	30
Black Reef	19127	2	no data			Shute Harbour	
Brook Reef	18008	2	1	0	1966	Cardwell	
Magnetic Island	19009	2	1	3	1981	Townsville	
Norman Reef	16030	2	1	3	1985	Cairns	
Pandora Reef	18051	2	1	3	1985	Townsville	
Bear Reef	15008	1	no data			Cooktown	
Keeper Reef	18079	1	3	1	1985	Townsville	
Milne Reef	16067	1	1	3	1980	Cairns	
Moore Reef	16071	1	1	3	1985	Cairns	
Taylor's Cay (Reef)	17064	1	3	1	1984	Mission Beach	
Wilson Is (Reef)	13129	1	no data			Gladstone	
Hudson Island	?	1					
Musgrave Reef	?	1					
other non-specific locations		2					
Total		253 (n=209)					

There were: 209 valid cases; 133 tourists who have not yet seen coral; 12 missing cases (mostly because could not remember names of reefs). * The Whitsunday group in this study includes South Molle Island and Hayman Island, and tourists who responded 'the Whitsundays'. For the Whitsunday group proper, AIMS data is only available for Hook Island, which is listed separately in Table 25. Respondents could list up to three reefs visited this holiday. Tourists mentioned an average of 1.2 reefs each. The price given in this table is an approximate price for a standard package including lunch, snorkelling and coral viewing.

COT Rating (Source: AIMS Summary File 1985) 1 low number of COT (0 - 3) 2 moderate (4 - 15) 3 high number (16 +)
 Coral Rating (The AIMS assessment of coral quality is based on the proportion of live coral coverage). (Source: AIMS Summary File 1985)
 1 poor quality live coral or much dead coral 2 moderate quality coral 3 good quality live coral 0 no data

3.19 Relationship Between Quality Of Coral And Price Of Day Trip

It is difficult to compare the price of tickets for day trips. Different operators offer different packages. Some operators include in the fare items such as lunch, snorkel gear, and glass bottom boating, while for other operators these may be extra cost options. There may also be a choice of vessel e.g. slow boat or fast cat, or even hydrofoil. The price given in Table 25 is an approximate price for a standard package including lunch, snorkelling and coral viewing.

However, when comparable packages are examined (Table 25), there is little difference between different operators. There are relatively inexpensive destinations such as Green Island, Low Isles, Great Keppel Island and Fitzroy Island, and the more expensive reef destinations. Heron Island and North West Island are particularly expensive because of their greater distance from the mainland. Price of the ticket is largely due to distance to the location.

Because of the small variation in prices, and certain inaccuracies and differences in the fare structure, prices have been collapsed into inexpensive and (relatively) expensive. This allows comparison of the price with coral quality (Table 26).

Only those reefs for which AIMS coral quality data and total annual visitors days are available are included.

Table 26 does not establish the strength of the relationship between coral quality and price. To gain a true understanding of the relationship between coral quality and price requires consideration of the number of visitors to each destination. The data used in this survey is representative of north Queensland tourism in many respects, but is not in correct proportion in terms of location visited, due to the interviewing strategies used in this study.

Visitor numbers for each location for 1986 were obtained from GBRMPA. This information is confidential and cannot be reported here. However, it is not a breach of confidentiality to report the number of tourists visiting the grouped reefs in Table 26 as a percentage of the total number of tourists visiting those selected reefs (Table 27).

Measures of association, e.g. correlation coefficients, are not affected by the sample size, and will be the same whether calculated on the percentage data, or the original visitor days.

The number in each cell is a percentage figure of the number of tourists visiting the reefs with that combination of price and coral quality out of the total number of tourists visiting all the reefs being considered (see Table 26). These percentages were calculated from the original confidential data on 1986 visitor days to these reefs as provided by GBRMPA.

With a few notable exceptions, e.g. Beaver Cay and John Brewer Reef, tourists who are prepared to pay more to go on the more expensive trips see better quality coral. This relationship is represented by a correlation of .65.

There are a number of difficulties with this analysis, in terms of measuring the quality of coral, calculating comparable trip prices, and determining visitor numbers. Coral quality and visitor days data is not available for all destinations. There are also other ways than the method used here to show potential relationships between price and coral quality. However, there is sufficient evidence to show that price is related to the quality of coral. It is acknowledged that the relationship between price and coral quality is probably indirect and related to distance, although this is irrelevant in this analysis, which is designed to show that tourists who are prepared to pay higher trip prices are likely to see better quality coral.

Table 26 Coral Reefs Classified According To Price And Coral Quality

		PRICE	
		Inexpensive	Expensive
CORAL QUALITY	Poor	Green Is	Beaver Cay John Brewer Reef
	Moderate	Low Isles	Hastings Reef north West Is
	Good	Fitzroy Is	Agincourt Reef Lady Musgrave Is Michaelmas Cay Heron Is Hardy Reef

Table 27 Association Between Coral Quality And Price

		PRICE	
		Inexpensive	Expensive
CORAL QUALITY	Poor	29	10
	Moderate	6	13
	Good	2	40

Pearson $r = .65$ Tau $b = .61$ Tau $c = .67$

3.20 Relationship Between Coral Quality And Perceptions Of Coral

Overall, tourists for whom the reef was important, as measured by the Reefness scale, saw better quality coral (as measured by AIMS) (Table 28).

The Reefness items, because they do not require the respondent to have seen coral, represent the importance of the reef to the tourist before they leave on their holiday. The Coralness scale includes items that require the respondent to have seen coral, and can therefore be influenced by the tourist's perception of coral. The two scales are highly correlated at .83.

Table 28 Relationship Between Coral Quality And Reefness

	Coral Quality			
	Low	Med	High	sig
Reefness (n=187)	66	75	76	(p<.005)
Coralness(n=175)	53	61	63	(p<.005)

(mean score on scale)

Tourists who saw high quality reefs have significantly higher Coralness scores than tourists who saw low quality reefs. Even though the Coralness scale is influenced by the tourist's perception of coral, thus indicating that tourists are capable of distinguishing the quality of coral, some moderation of this interpretation is required because of the high correlation and confounding effect of Reefness. It is not possible to uniquely identify the causal direction in this relationship, i.e. whether high Reefness is causing tourists to choose high quality reefs to visit, or whether having visited high quality reefs, tourists increase their Coralness score.

The Reefness and Coralness scales are overall scales of the importance of the reef in terms of the tourist's holiday. They are made up of a number of component variables, each with its own precise meaning. These individual variables help provide further understanding of the relationship between the quality of the coral and the tourist's perception.

The quality of coral seen was only weakly related to the importance placed by the tourist on viewing coral (Tau b = -0.11, p = 0.051). However, controlling for previous coral experience, revealed that for tourists who had previous coral experience, either on the Great Barrier Reef (Tau b = -.22), or at other places in the world (Tau b = -.15), a moderate relationship existed between the quality of the coral and the importance placed on coral viewing. Among those tourists who had previous coral experience, tourists who visited higher quality reefs gave more importance to coral viewing than tourists who visited lower quality reefs. For tourists with no previous coral experience, there was no relationship (Tau b = -.004) between the quality of the coral seen and the importance placed on coral viewing.

The interpretation of this relationship is as follows. In general, tourists who have seen coral before, place less importance on seeing coral than tourists for whom coral is a novelty. Return tourists who are particularly interested in coral, will know of the Reef and of the crown-of-thorns starfish from their previous trip, and could possibly choose the better quality reefs, and be prepared to pay larger amounts of money, in order to view higher quality coral. Those not interested in coral choose their holiday location by other criteria and are not prepared to spend large amounts of money on day trips to the outer reefs. They consider viewing coral to be an unimportant additional activity undertaken at reefs nearby destinations chosen for reasons other than to view coral.

Tourists' perceptions of coral, measured in terms of worse, the same, or better than expected, was moderately related to the quality of coral (Tau b = .14, p < 0.05) (see Table 29). Tourists who saw higher quality coral were more likely to indicate that the coral was better than expected than were tourists who saw lower quality coral. However, the relationship was not as strong, and was not significant, for tourists with previous Great Barrier Reef experience (Tau b = .07, p = .30). For tourists with coral experience in other parts of the world, and for tourists with no previous coral experience, the relationship was moderate (Tau b = .13 and .14 respectively). The reason for a lack of a relationship between coral perception and coral quality for tourists with previous coral experience may be due to the quality of coral seen previously, or the importance placed on coral viewing.

Table 29 Relationship Between Coral Quality And Perceptions Of Coral

		CORAL QUALITY		
		Poor	Medium	Good
CORAL PERCEPTION	Worse	29	14	23
	Same	54	60	42
	Better	17	26	35
	Total	100	100	100
		(N=178)	(n=65)	(n=35)
			(n=78)	

$\text{Tau } b = .14 \text{ } p < .05$

The relationship between coral quality and coral perception was also confounded by the degree of importance placed on coral viewing. For tourists who considered coral viewing to be important, the relationship between the quality of coral and coral perception was not as strong ($\text{Tau } b = .13, p < .05$) as it was for people to whom coral viewing is not important ($\text{Tau } b = .33, p < .05$). This is because they are less likely to state that the coral is better than expected. A measure of satisfaction of coral rather than one based on whether the coral was worse, the same as, or better than expected may obtain a different result.

All this analysis should be regarded as experimental rather than conclusive. There are A number of problems with many aspects of this analysis, in particular with the AIMS coral quality rating and the coral perception rating. If this research is regarded as having important implications, it would be wise to re-examine the issue on its own.

3.21 Physical Features Of Holiday Destinations Required By Tourists

Respondents were asked in an open ended question about the physical features or facilities they required of a holiday destination (Table 30). In the first field trip, Winter, respondents were asked:

In general, what environmental properties and facilities do you look for in a holiday? By this I mean the environmental characteristics and facilities of the holiday destination that are important to you in your enjoyment of your holiday.

This was followed with a question about the psychological and emotional benefits obtained by holidaying. The aim of the question was to record the respondent's environmental requirements and/or required facilities so as to establish the importance of a natural environment versus various artificial environments. Therefore, it was important that respondents who felt that a high standard of accommodation was a primary consideration for their holiday would respond with an answer indicating this, while respondents who required that their holiday destination have a natural environment also respond to the same question.

There was some confusion generated by these questions, especially relating to the use of the term 'environment'. The interviewers were able to cope with this confusion, usually by simply repeating the question. In the second field trip, therefore, the order of the question was reversed and the question relating to physical features was changed to read:

What physical features or facilities do you look for in a holiday?

This wording achieved the same goals, while being much quicker to implement, with less misunderstanding. Because the interviewers were able to deal satisfactorily with problems

encountered in the first trip, there is not likely to be any major bias due to the different wording. However, it is possible that some of the differences that exist between the seasons (Table 31) is due to the different wording of the question.

Responses to this question have been recorded in Table 30. The responses that were given can be meaningfully grouped into five categories relating to facilities (44% of respondents), natural environment (43%), sun and sand (38%), variety (19%), and peace and quiet (11%) (Table 31). An analysis of these categories is provided in Table 31.

Factors affecting physical features of holiday destinations required by tourists are described as follows.

Season

In Winter, the most frequently given physical feature required of a holiday destination was a natural environment (46%), while in Summer, facilities was given more frequently (51%). Winter respondents were more likely to regard peace and quiet as being important than were summer respondents (19% vs 4%). Summer respondents were more likely to regard variety (24% vs 13%) and facilities (51% vs 36%) to be more important.

Origin of Tourist

Locals, Australians and International tourists all regarded facilities to be the most important physical feature of a holiday destination. Locals were the least likely to regard peace and quiet as being important (5% vs 12% and 12%). Other Australians were the most likely to regard sun and sand as being important (40% vs 32% and 36%), and were the least likely to regard variety as being important (15% vs 26% and 24%).

Tourist Status

Campers (71%) and tourists interviewed on reef trips (45%) regarded a natural environment as the most important physical feature. Resort guests (52%) and island day trippers (50%) regarded facilities to be most important.

Campers were the most likely to regard peace and quiet as being important (16% vs mean of 11%), and the most likely to regard a natural environment as being important (71% vs mean of 43%). Resort guests were the least likely to regard peace and quiet as being important (7%), and also the least likely to regard a natural environment as being important (34%). They were the most likely to regard facilities as being important (52%), while campers were the least likely to regard facilities as being important (27%).

Table 30 Physical Features Required Of A Holiday Destination

Responses	% of respondents giving this response
natural environment	23.0
good accommodation	16.8
beaches	15.9
scenic beauty	13.9
weather	11.2
sporting activities	9.7
facilities	9.1
proximity to water	8.6
peace and quiet	5.6
cleanliness	5.0
sunshine	4.7
variety of environments	4.7
mountains	3.5
comfort	3.2
excitement	3.2
tropical location	3.2
good food	2.9
quiet	2.7
primitive environment	2.7
new things	2.7
historical interest	2.4
variety	2.4
not too many people	2.4
good restaurants	2.1
must cater for kids	1.8
camping grounds/facilities	1.8
blend of nature and development	1.5
fishing	1.5
privacy	1.2
wildlife	1.2
good roads	0.9
rainforest	0.6
safety	0.6
good advertising	0.3
not of western mould	0.3
depends on holiday	3.8
don't know	1.2

604 responses, n = 339

Respondents were allowed up to 3 responses.
Mean number of responses per respondent was 1.8.
15 missing cases.

Table 31 Physical Features Required Of A Holiday Destination (breakdown)

	OVERALL	SEASON		ORIGIN OF TOURIST			Reef Day Trip	TOURIST STATUS			
		Winter	Summer	Local	Aust	over- seas		Resort Guest	Island Day Trip	Camper	Main- land
		(column percentages, multiple responses)									
facilities	44	36	51	47	44	44	38	52	50	27	28
natural environment	43	46	40	47	42	44	45	34	41	71	39
sun and sand	38	36	39	32	40	36	36	40	28	44	56
variety	19	13	24	26	15	24	19	22	19	11	17
peace and quiet	11	19	4	5	12	12	14	7	14	16	11

	First trip	PREVIOUS CORAL EXPERIENCE				DIVER STATUS		FISHER STATUS	
		Return visit	GBR exp	other place	No exp	Non Diver	Diver	Non Fisher	Fisher
facilities	44	44	45	46	42	44	41	42	52
natural environment	43	42	45	42	42	42	48	44	40
sun and sand	36	41	40	38	36	36	45	36	46
variety	22	13	15	20	21	18	22	21	11
peace and quiet	10	14	13	13	8	10	16	11	14

First Trip to north Queensland

First timers and return visitors equally regarded facilities to be most important (44%). Return visitors regarded sun and sand to be more important than first timers did (41% vs 36%), and were more likely to regard peace and quiet as more important (14% vs 10%). First timers regarded variety as being more important than did repeat visitors (22% vs 13%).

Previous Coral Experience

Previous coral experience had little relationship with the physical features required of a holiday destination. Tourists with previous coral experience, either on the Great Barrier Reef or elsewhere (13%), were more likely to regard peace and quiet to be important than were tourists with no coral experience (8%). Tourists with no coral experience (21%) and those with coral experience in other places in the world (20%), i.e. first timers to the Great Barrier Reef, were more likely to regard variety as important than were tourists with previous Great Barrier Reef experience (15%).

Diver Status

Divers considered a natural environment to be the most important feature of a holiday destination (48%) compared to non-divers (42%) who regarded facilities to be most important (44%). Divers were more likely to regard sun and sand to be important than non-divers (45% vs 36%).

Fishing Status

Fishers were more likely to regard facilities to be important than did non-fishers (52% vs 42%). They were also more likely to regard sun and sand (46% vs 36%), and peace and quiet (14% vs 11%) as being important. Non-fishers regarded a natural environment (44% vs 40%) and variety (21% vs 11%) as being more important than did fishers.

3.22 Physical Features Of Holiday Destinations Required By Tourists And Their Location

Tourists do not necessarily go to holiday destinations that are compatible with the requirements they have of holiday destinations. Tourists are subject to advertising, fads and fashions in travel, the recommendations of friends and travel agents, and may harbour considerable misinformation, as well as not having properly identified their own needs and desires. Tourist satisfaction depends greatly on matching tourists' desires with compatible destinations (Pearce 1982).

The diversity of destinations on the Great Barrier Reef allows for tourists with different requirements to go to different destinations provided that tourists are aware of the differences and can identify their own requirements.

Since this report does not evaluate the intended attributes of each destination, a comparison between tourists' requirements (see Table 32) and the characteristics provided by each destination is not possible. However, some comments about the relationship between the images of each destination, and tourists' requirements will be provided.

Furthermore, tourists were asked about the physical features they require of holidays in general, not of this particular holiday. Although some tourists make repeat visits to the same destination every year, and others go to different destinations but have essentially the same type of holiday, many tourists vary their holidays, and their trip to the Great Barrier Reef could be a variation from the usual holidays they take. Consequently, the physical features normally required of a holiday destination would not be required on this 'adventure' or 'novelty' holiday. They may become important, however, if the tourists were considering to make the Reef a repeat holiday destination.

Table 32 Location Of Respondent And Physical Features Required

	Physical Features required of a Holiday Destination					
Interview Location	peace quiet	natural env	variety	sun & sand	facilities	(n)
	(row percentages, multiple responses)					
Camp-dive Islands	18	63	11	33	30	27
Hinchinbrook Is	0	50	17	33	33	12
Green Is	18	48	22	27	45	67
Heron Is	20	47	27	27	53	15
Reef Trips	14	45	19	36	38	64
Great Keppel Is	8	40	23	52	29	48
Whitsundays	4	40	16	48	44	25
Dunk Is	4	31	15	41	66	68
Mainland locations (because of small sub-sample size, only n is given)	1	3	2	4	3	9
overall mean	11	43	19	38	44	(N=335)

15 missing cases
4 'don't know' respondents excluded

	peace quiet (n)	natural env (n)	variety (n)	sun & sand (n)	facilities (n)	total
REEF TRIPS	(because of small sub-sample sizes, only n is given)					
Low Isles	5	7	4	5	8	18
Agincourt Reef	0	10	1	7	5	16
Hastings Reef	0	3	3	2	4	8
Beaver Cay	1	3	1	1	4	6
Hardy Reef	0	2	0	3	1	5
John Brewer Reef	3	4	4	9	3	11
WHITSUNDAYS						
South Molle Is	0	6	3	5	8	14
Shute Harbour	1	4	1	6	2	9
Lindeman Is	0	0	0	1	1	2
CAMP-DIVE ISLANDS						
Lady Musgrave Is	0	6	3	3	4	10
north West Is	5	6	0	2	2	10
Masthead Is	0	5	0	4	2	7
MAINLAND LOCATIONS						
Mission Beach	0	1	1	3	3	6
Cairns	1	1	0	1	0	2
Mossman	0	1	1	0	0	1

Further research is required to clarify issues relating to the compatibility of tourists' holiday requirements and the Great Barrier Reef destinations.

Interpretation of the relationship between the location of the respondent at the interview and their requirements of holidays provides some surprises. Not surprisingly, however, is that tourists on the Camp-Dive islands considered that a natural environment was most important (63% vs overall mean of 43%). These tourists were also more likely to give peace and quiet as a response (18% vs mean of 11%). In keeping with the lack of facilities provided on these islands, this group were among the least likely to consider facilities to be important physical features of their holiday destinations (30% vs mean of 44%).

Great Keppel Island respondents were the most concerned about sun and sand (52% vs mean of 38%) in keeping with the image of that island. They also tended not to be concerned about facilities (29% vs mean of 44%). This low level of concern could be due to the 44% of Great Keppel Island respondents who are campers, the remainder being either day trippers (10%) or resort guests (46%). Keppel Island respondents were also not as likely to be concerned about a natural environment (40% vs mean of 43%).

What is surprising is that Hinchinbrook Island Resort respondents, while not regarding facilities to be important (33% vs mean of 44%), did not regard peace and quiet (0% vs mean of 11%), the point that Hinchinbrook advertises most, to be of any importance. Hinchinbrook Island respondents were more concerned about a natural environment than average (50% vs mean of 43%), but not much more than respondents on Green Island (48%), Heron Island (47%), or on reef day trips (45%).

Tourists on Dunk Island were the most concerned about facilities (66% vs mean of 44%), but were the least concerned about a natural environment (31% vs mean of 43%).

Heron Island respondents tended to be concerned about facilities (53% vs mean of 44%) and peace and quiet (20% vs mean of 11%), but not particularly concerned about the environment (47% vs mean of 43%), in contrast to their location in a unique environment.

Respondents at Hinchinbrook Island and Heron Island, and especially Dunk Island, do not appear to be attracted to the unique environments in which these resorts are located. These resorts should promote their unique environment more to attract tourists who are also interested in the environment, otherwise their special location in unique environments is being wasted.

3.23 Attitudes To Further Development Of The Reef

There were a number of questions in the Questionnaire that provided information relating to the respondent's attitude to further development of the reef. These questions have previously been discussed in this report in other contexts, but are drawn together here.

Respondents can be classified as being anti-development if they state:

- 'over-development', 'characterless resorts', or 'too many people', in response to the question, 'What do you dislike about the north Queensland coastal region';
- 'development and commercialization', or 'too many people', in response to the question, 'What things might reduce your enjoyment of the Reef in the future';

- 'too many people' or 'commercialization', in response to the question, 'Are you aware of any problems or threats to the survival of the Reef';
- or if they disagreed with the statement: 'There should be more commercial development in the Reef area'.

The response 'destruction of the environment' given to the question about dislikes could also be considered but does not apply only to the reef region.

This group of items reflects disapproval of further development of the reef and forms a hierarchy of the strength of objection to development. Anti-development sentiments expressed in response to dislikes about north Queensland identify those who oppose the current level of development. Anti-development responses to the question about future enjoyment of the reef, or about problems facing the reef identifies respondents who are opposed to future development. As open ended questions, respondents must be particularly concerned about those issues in order to mention them. By contrast, stating disapproval to the suggestion that there should be more commercial development in the reef area, does not identify respondents who are particularly concerned about development.

171 respondents disagreed with the suggestion that there should be more development, with 98 strongly disagreeing. This represents a total of 77% of tourists being opposed to more commercial development. 56 respondents were concerned about too many people in the future, with 97 respondents being concerned about future development. 31 respondents were concerned that too many people would pose a threat to the reef, and 12 people considered that development or commercialization would be a threat. A total of 46% were concerned about future development. 2 respondents complained about characterless resorts, 2 respondents complained about too many people, and 20 respondents complained about over-development. A total of 7% were concerned about over-development now.

A variable was created that measured over-development in a hierarchical fashion as described above. The respondent was allocated the value that represented their strongest feeling. Concern about present over-development was regarded as stronger than concern about over-development in the future, which was considered to be stronger than disagreement to the statement about more commercial development (see Table 33).

Table 33 Attitudes To Further Development Of The Reef

Hierarchical response	%
development not mentioned	16
no more development	36
over-development future problem	42
over-development problem now	7
Total	100
	(n=354)

In an effort to discover the characteristics of respondents who are opposed to further development, the variable measuring the hierarchical response to development (Table 33) was subject to same breakdown analysis as other issues considered in this report. When analysed in the four category state as displayed in Table 33, there were no significant differences; i.e. there was no difference in any respect, between respondents who opposed development, and those who did not oppose development. The only difference was that Summer respondents were more likely not to mention development (19% vs 12%), and winter respondents were more likely to consider that there was an over-development problem now (11% vs 3%).

Because response to the prompted question on development, 'There should be more commercial development in the Reef area', is relatively easy, the breakdown analysis was also conducted on the variable recoded to a dichotomy, where those opposing development included only those people that responded an anti-development concern in response to one of the open ended questions. In this case there were also no significant differences between those who opposed development and those who did not.

Analysis of the individual items had previously revealed that Australians were more concerned about over-development and too many tourists than international and local tourists, as given in response to the question about dislikes about north Queensland (Table 6). International tourists, followed by Australians were more concerned than local tourists about over-development in the future. Local tourists, however, were more concerned about too many tourists (Table 18).

This survey was not designed to determine attitude to development. Analysis of over-development attitudes is based on data available in the Questionnaire, solely to provide an insight into the issue and assist in future research design. Further research explicitly considering the development issue is required. For example, the measure of development provided here is only of the form of opposition to further development. It does not consider what the respondents consider to be a satisfactory level of development. It is known that respondents vary in what they consider to be over-development (see Table 34).

Respondents on Hinchinbrook Island and on the Camp-Dive Islands, Lady Musgrave Island, north West Island and Masthead Island, had the highest level of opposition to development. These locations, however, exhibit among the lowest levels of development themselves. Of course, tourists were responding to north Queensland as a whole, and not necessarily to the location they were visiting. It is not surprising, therefore, that tourists who consider that north Queensland in general is too developed already, and those who generally oppose development, will choose holiday destinations that have low scale development. Similarly, respondents at some of the more developed locations, the Whitsundays, Green Island and Great Keppel Island, appear to be less concerned about development than respondents from other locations. Because they are not so concerned about development, they are prepared to accept, and possibly prefer, the tourist locations that exhibit a greater degree of development.

This is supported by examining the physical features demanded of a holiday location by tourists in relation to their attitude to development (Table 35). Tourists who consider that there is an over-development problem now, are the most likely to want a natural environment (58% vs mean of 43%) and peace and quiet (21% vs mean of 11%) as features of their holiday destination, and are the least likely to require good facilities (29% vs mean of 44%). Those who consider that there will be an over-development problem in the future also tend to consider that a natural environment is an important feature of the holiday destination (46%).

Table 34 Location Of Respondent And Attitude To Development

Interview Location	Attitude to Development				n
	no mention of dev	no more dev	over-dev future problem	over-dev problem now	
	(row percentages)				
Hinchinbrook Is	0	0	77	23	13
Camp-dive Islands	11	25	54	11	28
Heron Is	0	47	53	0	15
Whitsundays	15	37	48	0	27
Green Is	18	34	41	7	73
Reef Trips	21	32	38	9	66
Dunk Is	12	45	38	4	73
Great Keppel Is	22	44	32	2	50
Mainland locations (because of small sub-sample size, only n is given)	2	1	3	3	9
					354
REEF TRIPS	(n)	(n)	(n)	(n)	total
	(because of small sub-sample sizes, only n is given)				
Low Isles	4	6	6	3	19
Agincourt Reef	2	5	9	1	17
Hastings Reef	2	2	3	1	8
Beaver Cay	1	1	3	1	6
Hardy Reef	3	0	2	0	5
John Brewer Reef	2	7	2	0	11
WHITSUNDAYS					
South Molle Is	3	4	7	0	14
Shute Harbour	1	4	6	0	11
Lindeman Is	0	2	0	0	2
CAMP-DIVE ISLANDS					
Lady Musgrave Is	1	2	8	0	11
north West Is	1	1	5	3	10
Masthead Is	1	4	2	0	7
MAINLAND LOCATIONS					
Mission Beach	2	0	3	1	6
Cairns	0	1	0	1	2
Mossman	0	0	0	1	1

Tourists who made no mention of development were the most likely to be concerned about facilities (49% vs mean of 44%), and the least likely to be concerned about peace and quiet (6% vs mean of 11%). They tended not to regard a natural environment as being important (39% vs mean of 43%), and were more likely to regard sun and sand (41% vs mean of 38%) and variety (20% vs mean of 19%) as being important.

Table 35 Attitude To Development And The Physical Features Required Of A Holiday Destination

Physical Features	Attitude to Development			
	no mention of dev	no more dev	over-dev future problem	over-dev problem now
	(column percentages, multiple responses)			
Peace & quiet	6	14	9	21
Natural environment	39	38	46	58
Variety	20	18	19	17
Sun & Sand	41	41	36	25
Facilities	49	44	45	29
n	(51)	(119)	(141)	(24)
	(total n=335)			

15 missing cases
 4 'don't know' respondents also excluded

3.24 Next Visit To North Queensland

Respondents were asked when they thought they will next have a holiday in north Queensland. However, data about people's future behaviour are notoriously unreliable. Many people have not necessarily thought about future plans, and future plans are dependent on all sorts of contingencies, many of which cannot be foreseen. That is, the number of tourists who actually will return in the specified time will be less than the number that indicated they would return. Questions of this nature are also among the few questions where the potential for interviewer effect is great and the return visit response over rated. This is because tourists may not wish to offend an interviewer by suggesting that they will not return. Thus while the absolute figures will be overstated, there is no reason to believe that the ratio of overstatement will vary between the various subgroups. This means that such data can still be used for comparative purposes, and to establish the maximum value of repeat visits.

Because major differences have become evident between first timers and repeat visitors, and between Australians and international tourists, analysis of next visit controls for these variables (see Table 36).

Table 36 Next Visit To North Queensland

	FIRST TIME		REPEAT VISITOR	
	Aust	Int	Aust	Int
	(column percentages)			
within 12 months	17	6	47	14
within 2 years	25	10	19	29
within 5 years	24	24	17	14
within 10 years	7	6	3	0
more than 10 years	1	4	1	21
never	5	27	0	14
don't know	21	23	13	7
total	100	100	100	100
n	(87)	(108)	(116)	(14)

325 valid cases

20 locals excluded from analysis

9 missing cases

354 total

Tourists who were in north Queensland for the first time were less likely to return within five years than were tourists for whom it was not their first time in north Queensland. This was especially the case for international tourists in north Queensland for the first time, of whom only 40% stated that they would return within five years. 56% of Australians at the Reef for the first time considered that they would return within five years, while 83% of Australians, and 57% of international tourists, who were already on the Reef for a return visit, considered that they would return within five years.

Table 37 Timing And Reason For Next Visit To North Queensland

	Within 5 years	More than 5 years & don't know	Never
(column percentages, multiple responses)			
weather	36	27	14
reef	16	28	34
relaxation	17	8	3
sightseeing	14	13	14
new	11	13	14
water activities	12	7	0
part of trip	8	11	24
visit friends	8	8	10
social	6	11	0
work	6	8	3
unique environment	6	3	2
repeat visit	5	3	3
money	2	6	0
n	(168)	(71)	(29)

268 valid cases

20 locals excluded from analysis

66 missing cases due to 2 interviewers failing to ask reason for visit.

354 total

A continuation of trends is obvious for future holidays to north Queensland. Tourists who plan to return to north Queensland for holidays within the next five years had reason similar to those tourists who were on repeat visits. The reef is relatively unimportant, and the weather and relaxation are of greater importance for people who plan to return within five years (Table 37).

There were only small differences in the physical requirements expected of a holiday destination between those who planned to return, and those who did not (Table 38).

Table 38 Physical Requirements Of Tourists Planning To Return To North Queensland

	Within 5 years	More than 5 years & don't know	Never
(column percentages, multiple responses)			
facilities	45	41	38
natural environment	42	41	53
sun and sand	38	44	24
variety	18	24	18
peace and quiet	12	8	12
n	(205)	(80)	(34)

319 valid cases

20 locals excluded from analysis

15 missing cases

354 total

3.25 Profile Of Reef Visitors

Because of the potential undersampling of the 'active' tourists, especially divers and fishers, these two groups are also not included in the analysis here. Locals have also been excluded in this analysis.

From an analysis of the data in this report, it appears that the Great Barrier Reef is visited by two main groups of people.

One group comprises those people who are coming to north Queensland for the first time. This group is a very mixed group and has a number of different reasons for coming to north Queensland. It comprises about 50% of reef tourists.

The second major group is those people who come to north Queensland for holidays quite regularly. Their major reason for coming to north Queensland is the weather. They are primarily concerned to relax on their holidays and they require a warm coastal environment to do this. The Reef is unimportant in terms of their holiday. They may go coral viewing as an activity while they are at an island resort, but coral viewing tends to be unimportant for these people, and they tend to be disappointed by coral, possibly because they tend to only see poor quality reefs. This group is primarily Australian, southerners trying to escape the southern winter, but also includes some international tourists (less than 10% of international tourists). Some 58% of Australian tourists on the Reef are return visitors. This group comprises perhaps 40% of Reef tourism. These people are primarily Resort dwellers.

A third group which comprises only a very small amount of Reef tourism (possibly 5%) contains tourists who have a particular interest in coral and make return trips to the Reef in order to see better quality coral. This group would include many divers. The last group comprising 5% are tourists who have come back to the Reef region for a second time and are interested in looking around further, without being necessarily interested in coral.

First timers, after having visited the Reef, will either never come back (17% + 22% who don't know), or will join the ranks of one of the other three groups.

First timers are a very heterogeneous group. Some (27%), particularly those who have coral experience in other places in the world, have come to see the Great Barrier Reef. These may be coral 'buffs' who are particularly interested in seeing coral and will go on several trips to the outer reef. They may return to see other reefs.

Other first timers have come to north Queensland because they have done a lot of travelling and they haven't been to north Queensland before. The increasing awareness of Australia overseas is responsible for attracting these people to north Queensland. By contrast, other tourists are only in north Queensland because it was a part of a trip and they didn't particularly plan to be on the Reef. Many of the complaints about the weather came from this group, primarily from older American tourists.

4 CONCLUSION

There are many tourists who visit the Great Barrier Reef for whom the Reef itself is not important in terms of their holiday. These people visit the Reef because of the weather and the relaxed nature of Reef holiday destinations. They tend to be repeat visitors and are mostly Australian. For them the Reef is a regular holiday destination, and will continue to be so. Other tourists are particularly interested in the Reef. These tend to be first timers, and do not necessarily plan to return to the reef. Most international tourists fall in this category.

North Queensland was perceived as a safe place, and tourists generally had no fears or special concerns about holidaying in north Queensland.

Most tourists were concerned about over-development. Almost all considered that there should be no further development on the reef.

Tourists can appreciate coral quality. Tourists who see higher quality coral have greater satisfaction than tourists who see poorer quality coral. However, the relationship between coral quality and coral perception is affected by other variables.

Dunk Island, Hinchinbrook Island and Heron Island did not appear to be attracting tourists who have environment related holidays and who therefore take advantage of these resorts' unique locations in special environments.

The results of this study have implications not only for the management of the Reef, but also for the future of tourism in north Queensland. Tourism in the Reef region comprises two main groups. The first timers who are attracted because of the reef, and the repeat tourists who return because of the idyllic weather and general atmosphere of the Reef, rather than the Reef itself. At present, these groups are equally important to the tourist industry on the Reef, and both groups are important to the future of a sustained tourist industry.

Only 40% of first time international tourists plan on returning within five years, whereas 83% of Australian tourists who had previously been to north Queensland plan on returning within that time. Since these groups are in approximately the same proportion on the reef, and since this study is representative, the Australian repeat tourism group will contribute more to future tourism on the Reef than return international tourism, unless there is a doubling of the proportion of international tourists to domestic tourists in the near future.

The reasons given by the first timers for coming to north Queensland are more related to the Reef and to sightseeing, whereas Repeat visitors gave reasons relating to the Weather. The weather was also important to first timers. While these are the reasons that have been stated by tourists, there are a number of other factors that contribute to their decision to come to north Queensland for this holiday. For first time international tourists, things like the popularity of things Australian, the value of the dollar, and the risk of terrorist attack in European destinations for US tourists are also very important. This group, is a high income group, has extensive international tourist experience, and Australia was the next place on the list. In the future, the popularity of destinations like Australia with regard to other tourist destinations can change, and the attractiveness of Australia itself may change, and therefore Australia may not be as important a tourist destination as other locations are.

It is likely therefore that the repeat Australian tourists may contribute more in terms of tourist numbers to the tourist industry in the future than first time tourists. Certainly this group should not be excluded from planning considerations.

While the reasons for holidaying in north Queensland for the return tourists are more related to the weather and relaxation, and first timers are more concerned about the reef, other differences

between the two groups tend to be small. Both groups are concerned about over development and consider that there should not be further development on the Reef. Differences in the physical requirements demanded of holiday destinations between the two groups were also small. Therefore, in terms of planning it is possible that the two groups, despite their different orientations in terms of holidays, discovery versus relaxation, may not require different facilities. Furthermore, it does indicate that the first timer international group may be over-serviced, in that the standard, cost and type of facilities being provided are more than is required by them. This finding is somewhat speculative as there was no analysis relating to the standard of accommodation, something that possibly should be considered further. Should this be the case, however, there are profound flow on implications for the tourist industry in Queensland as it would appear that there is too much luxury hotel development, and not enough facilities for low and middle income family groups. Backpacker groups seem to be adequately catered for.

With the enormous growth that has been occurring in the tourism industry in north Queensland, the success of the large scale developments that have been occurring is a self fulfilling prophecy. With sufficient advertising, access to travel agent bookings, and a shortage of beds, high cost accommodation will be utilised by tourists. That such luxury accommodation was desired by tourists is a different question, especially where tourists are placed in a situation where they can exercise little choice, either because alternative facilities do not exist, or because of a lack of information. Because of the effect of large scale luxury development on prices, and the change in character of locations, development of this kind may drive away other forms of tourism, and often such development is at the expense of, or to the exclusion of, low cost development.

Repeat tourism on the Reef is known to be a sustained tourist industry by virtue of the large number of Australians who have return holidays on the Reef. Only 40% of first time international tourists plan on returning within five years. Since this figure will be exaggerated, it should be compared to the 83% of repeat Australian tourists who plan on returning within five years to gain an appreciation of the relative importance of international tourism. Therefore, international tourism will not be important for sustained tourism in terms of repeat visitation. First time tourism to north Queensland, and even Australia, is a fashion, and north Queensland cannot indefinitely continue to attract new tourists at the rate of growth occurring now. It is also possible that the proportion of first time tourists to repeat tourists travelling to north Queensland will change, with repeat tourism becoming far more important. However, first time tourism is likely to continue to grow for at least the next few years.

The tourist industry should identify how it can increase return visitation, especially among the international group. Comments received from tourists indicated that while they enjoyed their time in north Queensland, there was nothing particularly unique or characteristic about north Queensland. The tourist industry may be advised to examine how to establish a tourist industry that has a uniquely Australian character, offers something different to other holiday destinations closer to the home countries of the international tourists, without excluding domestic tourists.

5 RECOMMENDATIONS FOR FURTHER RESEARCH

A number of aspects of this report are speculative, having been included in the report at the request of the GBRMPA Project Officer, and were not necessarily considered during development of the study.

The Analysis relating to the perceptions of coral needs to be re-examined using a measure of coral satisfaction, and using indicators of coral quality other than the AIMS coral rating.

Issues relating to development should be re-examined in a study specifically concentrating of this issue, to develop a picture of what tourists consider to be appropriate levels of development, and what they consider to be over-development. This could be linked to more precise statements about the standard and type of facilities required of tourist destinations, not only in general, but on the Great Barrier Reef in particular.

More research should be undertaken to see how north Queensland can provide a tourist industry that is uniquely Australian, which will continue to attract not only first time tourism, but repeat tourism.

ACKNOWLEDGMENTS

This research would not have been possible without the assistance of the tourist operators in the Great Barrier Reef region who gave permission for interviewing to take place in their resorts, or on their vessels. Their cooperation was vital in the completion of a study of this nature.

The cooperation of the tourists who participated in the study is also very much appreciated. Surveys of this kind are an infringement on their time.

Sally Driml, the GBRMPA Project Officer for this study, was a great help. Thanks also to Tor Hundloe and Marc Carter, colleagues on the companion report, *Economic and Socio-Economic Impacts of the Crown of Thorns Starfish on the Great Barrier Reef*, whose suggestions and ideas have been helpful. Finally, thanks to the interviewers for such hard work under such difficult conditions.

REFERENCES

- Australian Bureau of Statistics 1986, Environmental Issues and Usage of National Parks, Australia, Canberra.
- Bandaranaike, S., R. Neumann and T. Hundloe 1984, Consumption Patterns of Fish and Shellfish in the Moreton Region, Brisbane: Institute of Applied Social Research, Griffith University.
- Driml, S. 1987, Great Barrier Reef Tourism: A Review of Visitor Use, Townsville: Great Barrier Reef Marine Park Authority.
- Glaser, S. and I. Wilkinson 1981, Reef Tourism: Attitudinal and Socio-Economic Study, Report for the Great Barrier Reef Marine Park Authority, Unisearch Ltd, University of NSW.
- Hundloe, T.J., F.M. Vanclay and M. Carter 1987, Economic and Socio-Economic Impacts of the Crown-Of-Thorns Starfish on the Great Barrier Reef, Report to the Great Barrier Reef Marine Park Authority, Brisbane: Institute of Applied Environmental Research, Griffith University.
- Pearce, P.L. 1982, The Social Psychology of Tourist Behaviour, Oxford: Pergamon.
- Queensland Tourist and Travel Corporation 1986, Major Survey Research Programme: Executive Summaries as at January, 1986: Barrier Reef Region, Brisbane.

Definitions

The Great Barrier Reef Region was defined as the coastal region between Bundaberg and northern Cape York including all islands and reefs.

A Visitor or Tourist was defined as a person of at least 15 years of age, who was on holidays away from home during which time they were financially independent of their parents, who had undertaken, or intended to take, a visit to a location within the reef region as defined above.

A Resort Guest was defined as a person who was intending to stay, or who had stayed, for at least one night at a resort on the island where the interview took place on the day the interview took place.

A Camper was defined as a person who was intending to camp, or who had camped, at least one night on the island where the interview took place on the day the interview took place.

A Reef Day Tripper was defined as a person who had taken, or who intended to undertake, a day trip to a coral section of the reef where no overnight stay is permissible, on the day of being interviewed.

An Island Day Tripper was defined as a person who had taken, or who intended to take, a day trip to an island of the reef region on the day the interview took place.

A Fisher was defined as a person who had been, or who intended to go, recreational fishing within the reef region during their current trip to the Reef region.

A Diver was defined as a person who had been, or who intended to go, scuba diving within the reef region during their current trip to the Reef region.

A Trip or Holiday was defined as the period spent away from the respondent's usual place of residence which included at least one meal being consumed during that period, or at least covering a time period when it would normally be expected for a meal to have been consumed.

A Coral Section of the Reef was defined as an area of the Great Barrier Reef region where coral could be viewed, and including outer reefs, coral cays, and fringing reefs.

QUESTIONNAIRE

INSTITUTE OF APPLIED ENVIRONMENTAL RESEARCH

Strat. ☐☐ Int. ☐☐

Interview location _____

Time _____ Date _____

Weather _____

TOURIST QUESTIONNAIRE

Good morning/afternoon, my name is _____ (pass business card). I'm undertaking some research for the Institute of Applied Environmental Research at Griffith University.

I would like to ask you some questions about your trip to the North Queensland coastal region.

(ASK ONLY IF ON RESORT ISLAND)

1. Are you staying on (this island) or just visiting for the day?

Resort Guest 1. ☐

Day-tripper 2. ☐

Camper 3. ☐

2. Please describe in detail for me your reasons for visiting the North Queensland coastal region?

Holiday/Recreation 1. ☐

Business and Recreation 2. ☐

Business only 3. ☐

Visit friends & relatives 4. ☐

specific reasons _____ 5. ☐

If answer is BUSINESS ONLY No further Questions.

3. What do you like about the North Queensland coastal region?

4. What do you dislike about the N.Qld. coastal region?

5. In what city or town do you live? (if overseas, which country)

city _____ State _____

(ONLY ASK IF FROM OUTSIDE THE REGION)

6. Is this your first trip to the North Queensland coastal region?

Yes 1. ☐

No 2. ☐

If NO, how many times have you been to the region before this trip?

no. of times ☐☐

If NO, how many times have you visited the North Queensland coastal region since this time last year?

no. of times ☐☐

7 On average, how often do you go on holidays away from where you live?

- Several times a year 1 ☐
- Twice a year 2 ☐
- Once a year 3 ☐
- Once every eighteen months 4 ☐
- Once every 2 years 5 ☐
- Once every 5 years 6 ☐
- Less often 7 ☐
- Don't know 8 ☐

COMMENTS

8. How many nights do you expect to stay away from your usual place of residence during this holiday?

nights _____

9 How many nights have you been away from your usual place of residence so far during this holiday?

nights _____

(ONLY ASK IF FROM OUTSIDE THE REGION)

10. What is your expected length of stay in the North Queensland coastal region in particular?

nights _____

(ONLY ASK IF FROM OUTSIDE THE REGION)

11. How many nights have you spent in the N.Qld. coastal region so far during your holiday?

nights _____

12. Where in the region will you spend the most number of nights?

location _____

13. What type of accommodation are you mostly staying in during this trip?

- Local Resident 1 ☐
- Private Home 2 ☐
- Own Holiday Home 3 ☐
- Caravan 4 ☐
- Camping 5 ☐
- Hotel or Motel 6 ☐
- Boat 7 ☐
- Rented House/Flat 8 ☐
- Other (specify) _____ 9 ☐

(ONLY ASK IF FROM OUTSIDE THE REGION)

14. What was your main means of transport to the North Queensland coastal region?

- Plane 1 ☐
- Car 2 ☐
- Boat 3 ☐
- Train 4 ☐
- Bus 5 ☐
- Other (specify) _____ 6 ☐

15 While staying within the North Queensland coastal region what is your main means of transport?

Plane 1. ☐
Private Car 2. ☐
Rental Car 3. ☐
Boat 4. ☐
Train 5. ☐
Bus 6. ☐
Other (specify) _____ 7. ☐

16. (a) How many members of your family, living in your household and including yourself, are on this holiday?

adults _____
children (under 15) _____

(b) Are these all the members of your family?

Yes 1. ☐
No 2. ☐

If NO, how many members are not here with you?

adults _____
children (Under 15) _____

17. Sex of respondent

Male 1. ☐
Female 2. ☐

18. According to the categories on this card (SHOW CARD 1) what is your best estimate of the costs of your holiday (for your family) so far? Please include all costs to date, even though you may not have actually paid for them yet. How much have you spent on....

Travel \$ _____

(If AIR TRAVEL in Q.14)

Does the above figure include the cost of return airfare(s)?

Yes 1. ☐
No 2. ☐

Accommodation \$ _____
Food/Drinks/Entertainment/Sundries (eg souvenirs) \$ _____
Sightseeing/Excursions \$ _____

(If on a package tour put value of whole tour)

PACKAGE TOUR TOTAL \$ _____

19 Please tell me the places you have visited in N Qld during this holiday?

20. Please tell me the places you intend to visit in N.Qld. during the remainder of this holiday?

21. During this trip to N.Old. have you seen any coral reef sections of the Great Barrier Reef?

Yes 1. ☐

No 2. ☐

If NO, do you intend to make a visit to see a coral section of the Reef?

Yes 1. ☐

No 2. ☐

If NO, why don't you intend to visit a coral section of the Reef?

GO TO Q. 22

If YES, by which of the following means did you see coral?

	YES	NO
Snorkelling	1. <input type="checkbox"/>	2. <input type="checkbox"/>
Scuba Diving	1. <input type="checkbox"/>	2. <input type="checkbox"/>
Semi-submersible	1. <input type="checkbox"/>	2. <input type="checkbox"/>
Glass-bottom boat	1. <input type="checkbox"/>	2. <input type="checkbox"/>
Underwater observatory	1. <input type="checkbox"/>	2. <input type="checkbox"/>
Reef walking	1. <input type="checkbox"/>	2. <input type="checkbox"/>

Was the coral and marine life what you expected (probe if necessary)?

On this holiday to the N.Old. coastal region what are the names of the coral sections of the Reef where you have seen coral?

For (first reef mentioned) what means of transport did you use to get to that coral section of the reef?

What was the cost of an adult ticket for this means of transport?

How many days in length was the trip?

What was the port of origin for the trip?

LOCATION	TRANSPORT	COST	DAYS	ORIGIN

22. Prior to this trip to N.Qld., have you at any other time visited any coral sections of the Great Barrier Reef?

Yes 1. ☐

No 2. ☐

If YES, on previous holidays to the N.Qld. region what are the names of the coral sections of the Reef that you visited?

For (first reef mentioned) what means of transport did you use to get to that coral section of the reef?

How many days in length was the trip?

What was the port of origin for the trip?

What was the means of viewing the coral?

LOCATION	TRANSPORT	DAYS	ORIGIN	VIEWING MEANS

(If different to the section/s of Reef nominated in Q.21)

What is your reason for visiting (sections/s of the Reef mentioned in Q.21) rather than the section/s visited on previous trip/s?

23. Are there any other places in the world where you have seen coral?

Yes 1. ☐

No 2. ☐

If YES, where were these places?

24. What places have you been to, and what activities have you undertaken on holidays in the last five years?

Places/Locations	Activities

25. What places would you like to go to, and why, for holidays in the next five years?

Places/Locations	Reason for wanting to visit

26. Apart from time and money what factors limit your choice of holiday destination?

27. In general, what psychological or emotional benefits do you look for in a holiday?

28. What physical features or facilities do you look for in a holiday?

29. How important do you rate each of the following things in your enjoyment of this holiday (SHOW CARD 2)?

	Very Imp.	Somewhat Imp.	Not Very Imp.	Not at all Imp.	Not Rel.	Don't Know
Visit friends & Relatives	1	2	3	4	5	6
Enjoy scenery	1	2	3	4	5	6
Visit islands	1	2	3	4	5	6
See coral	1	2	3	4	5	6
Go Fishing	1	2	3	4	5	6
Sunbathing	1	2	3	4	5	6
Visit country towns	1	2	3	4	5	6
Go to National Parks	1	2	3	4	5	6
A quiet place	1	2	3	4	5	6
Eat seafood	1	2	3	4	5	6
Coastal location	1	2	3	4	5	6
A natural environment	1	2	3	4	5	6
Meet people	1	2	3	4	5	6
To get away from everything	1	2	3	4	5	6
See rainforest	1	2	3	4	5	6
Night life & entertainment	1	2	3	4	5	6
A warm, sunny climate	1	2	3	4	5	6
Historical places	1	2	3	4	5	6
See something new	1	2	3	4	5	6
Nature walks	1	2	3	4	5	6
Swimming	1	2	3	4	5	6
Snorkelling	1	2	3	4	5	6
Scuba diving	1	2	3	4	5	6
Other sporting activities	1	2	3	4	5	6

30. Here are two questions. Please listen to both questions before you give your answer to either question

a) How important was the Reef overall in attracting you to Nth. Qld. for your holiday?

1 2 3 4 5 6

b) How important was seeing coral and marine life in particular in attracting you to Nth. Qld. for your holiday?

1 2 3 4 5 6

(NOW REPEAT QUESTIONS)

31. Please relate to me your most enjoyable experience this holiday?

32. And your worst experience?

33. Before you left home what things worried you about your holiday. Was there anything you were concerned about that might spoil your holiday?

If no 'nasties' mentioned then ask:

Were you worried about any animals, insects or marine life?
(which ones specifically)

34. What things might reduce your enjoyment of the Reef in the future?

35. Are you aware of any problems or threats to the survival of the Reef?

36. Have you heard of the Crown of Thorns starfish?

Yes 1.0
No 2.0

If NO, go to Q.43

37. Have you seen a section of the Reef that has been attacked by the Crown of Thorns starfish?

Yes 1.0
No 2.0

38. Did you expect to see Crown of Thorns starfish on this holiday?

Yes 1.0
No 2.0
Don't know 3.0

39 Where did you hear about the Crown of Thorns starfish?

40 Can you tell me what the starfish does to the Reef?

41. Do you think it is a problem for the Reef?

Yes 1. ☐
Qualified Yes 2. ☐
No 3. ☐
Don't know 4. ☐

42. In what ways did knowing about the Crown of Thorns affect your decision to take a holiday on the Reef (Probe hard for divers)?

43. Here is a list of statements about holidays and the N.Qld. region in general. Please tell me how strongly you agree or disagree with the following statements. You can refer to this card to give your answer. (SHOW CARD 3)

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	D K
a) Coral and marine life on the GBR is truly beautiful.	1	2	3	4	5	6
b) The Reef is one of the greatest wonders of the world	1	2	3	4	5	6
c) There should be more commercial development in the Reef area.	1	2	3	4	5	6
d) Rainforests are an important tourist attraction for N.Qld.	1	2	3	4	5	6
e) N.Qld rainforest should be saved.	1	2	3	4	5	6
f) I can relax as much at home as I can on holidays away from home	1	2	3	4	5	6
g) There should be <u>very strict</u> controls to stop people harming the Reef in any way.	1	2	3	4	5	6
h) The GBR is an important tourist attraction for N.Qld.	1	2	3	4	5	6
i) I had been led to believe that coral was more colourful than it really is.	1	2	3	4	5	6

At present there is no entry fee charged for visiting coral sections of the Reef even though it is part of a Marine National Park. However, if an entry fee were to be charged in order to provide a fund that would assist in the management of the region

44. Would you be willing to pay a \$10.00 entry fee per adult (per family) per visit to coral sections of the Reef?

If YES, increment by \$5.00 per visit until a negative response is solicited. Then decrease the bid by \$1.00 until a positive response is again solicited, and record this amount.

If NO, decrease by \$1.00 per visit until a positive response is solicited, and record this amount.

\$_____ per visit

Of the (amount stated) what percentage do you think should be designated to the management of the underwater environment?

%

Don't Know ☐

Suppose that a trust fund were set up for the sole purpose of researching and controlling the Crown of Thorns starfish on the Great Barrier Reef:

45. Over and above the \$(amount stated in Q.44) you were willing to pay as an entry fee, would you be willing to pay a further \$5.00 to the trust fund per adult (per family) per visit to the coral section of the Reef?

If YES, increment by \$1.00 per visit until a negative response is solicited. Then decrease the bid by \$0.50 until a positive response is again solicited, and record this amount.

If NO, decrease by \$0.50 per visit until a positive response is solicited, and record this amount.

\$_____ per visit

If a ZERO value is obtained ask the reasons for such a value:

1. _____
2. _____
3. _____

If ZERO reason is "included in first fee" ASK:

How much of the (dollars stated in Q.44) would you direct towards a Crown of Thorns trust fund?

\$_____
Don't know ☐

46. As an alternative to paying a per visit fee to a Crown of Thorns starfish trust fund, would you be prepared to pay a once only donation?

Yes 1. ☐
No 2. ☐

If YES, what is the maximum amount you would be prepared to give as a donation?

\$ _____

47. When do you think you will next have a holiday in the N.Qld. coastal region?

- Within 12 months 1. ☐
 Within 2 years 2. ☐
 Within 5 years 3. ☐
 Within 10 years 4. ☐
 More than 10 years 5. ☐
 Never 6. ☐
 Don't know 7. ☐

48. Before you left home how concerned were you about the following things in your decision to come to the N.Qld. coastal region for this holiday (SHOW CARD 4)?

	Very Conc.	Somewhat Conc.	Not Conc.	Very Not at all	Not safe & Inv.	Not Rel.	Did not Consider	Didn't Know	Didn't Know
Bad weather	1	2	3	4	5	6	7	8	9
Marine Stingers	1	2	3	4	5	6	7	8	9
Coral poisoning	1	2	3	4	5	6	7	8	9
Cyclones	1	2	3	4	5	6	7	8	9
Crocodiles	1	2	3	4	5	6	7	8	9
Cane toads	1	2	3	4	5	6	7	8	9
Crown of Thorns	1	2	3	4	5	6	7	8	9
Sharks	1	2	3	4	5	6	7	8	9
Too many people	1	2	3	4	5	6	7	8	9
Stonefish	1	2	3	4	5	6	7	8	9
Snakes	1	2	3	4	5	6	7	8	9
Seafood poisoning	1	2	3	4	5	6	7	8	9

49. So far on this holiday have you made any recreational fishing trips to coral sections of the Reef?

- Yes 1. ☐
 No 2. ☐

If YES, on how many days have you made recreational fishing trips to coral sections of the Reef?

days

50. Do you intend to make any recreational fishing trips to coral sections of the Reef during the remainder of your trip?

- Yes 1. ☐
 No 2. ☐

If YES, on how many days do you intend to undertake recreational fishing trips to coral sections of the Reef during the remainder of this holiday?

days

To ensure that our sample is representative the next few questions are background questions

51 Do you have a job, business or farm?

Yes 1. ☐

No 2. ☐

If YES, what type of work do you do?

type of work _____

If NO, what is your main activity?

main activity _____

52. What is the highest level of education you have obtained?

Never went to school 1. ☐

Some primary 2. ☐

Completed primary 3. ☐

Some secondary 4. ☐

Junior/Form 4/Year 10 5. ☐

Senior/Form 6/Year 12 6. ☐

Trade certificate/Nursing Diploma 7. ☐

Tertiary degree 8. ☐

Other (specify _____) 9. ☐

53. What was your age on your last birthday?

Years

54. Could you please indicate, from this card, which category your combined annual gross family income falls within (include all members of the family) (SHOW CARD 5)?

No Income 1. ☐

\$1 - 2,000 2. ☐

\$2,001 - 4,000 3. ☐

\$4,001 - 6,000 4. ☐

\$6,001 - 9,000 5. ☐

\$9,001 - 12,000 6. ☐

\$12,001 - 15,000 7. ☐

\$15,001 - 18,000 8. ☐

\$18,001 - 22,000 9. ☐

\$22,001 - 26,000 10. ☐

\$26,001 - 32,000 11. ☐

\$32,001 - 40,000 12. ☐

\$40,001 - 50,000 13. ☐

over \$50,000 14. ☐

Don't know 15. ☐

Refuse 16. ☐

Would you like to make any other comments about the N.Qld. coastal region or this research.

THANK YOU

Formation of Scale to Measure Importance of Reef on Holiday

A number of different questions relate directly to the importance of the reef on this holiday. These questions and a number of other questions were considered for possible inclusion in a scale to measure the importance of the reef in terms of the tourist's holiday. These questions include:

- Q 21: Was the coral and marine life what you expected.
- Q 30 (a): How important was the reef overall in attracting you to north Queensland for your holiday.
- Q 30 (b): How important was seeing coral and marine life in particular in attracting you to north Queensland for your holiday.

Items from the list in Q 29 (How important do you rate each of the following things in your enjoyment of this holiday), especially items:

- (IMP 4) see coral
- (IMP 22) snorkelling
- (IMP 23) scuba diving

Items from the list in Q 43 (agreement or disagreement), in particular, items:

- (ITEM 1) Coral and marine life on the GBR is truly beautiful.
- (ITEM 2) The reef is one of the greatest wonders of the world.
- (ITEM 7) There should be very strict controls to stop people harming the reef in any way.
- (ITEM 9) I had been led to believe that coral was more colourful than it really is.

Open ended questions were also monitored for responses relating to the reef. In particular whether the respondent mentioned the reef as a reason for coming to north Queensland, if they mentioned the reef as one of the things they like about north Queensland, and whether the reef was mentioned as their best experience.

The number and types of ways the tourist has seen coral, and the entry fee nominated by the tourist while measuring the consumer surplus (see Hundloe, Vanclay and Carter, 1987), were also considered.

Some of the questions above apply only if the respondent has seen coral, others apply to all tourists independent of their having seen coral. Two scales were therefore developed, one applying to all tourists and consisting only of those items that apply equally to all tourists independent of their having seen coral, the other scale applying only to people who have seen coral.

A number of other constraints also reduced the size of the potential scale. The number and types of ways in which tourists have seen coral does not measure the importance of the reef in terms of their holiday, but only selects for the tourist's ability to participate in those activities, in particular, snorkelling and scuba diving. These items were therefore dropped from consideration.

The two parts of Question 30 correlate at .82, and therefore the two items provide very little additional information than one item on its own. It appears that there is some doubt about the ability of individuals to distinguish between these two items. This fact, together with comments received during interviewing indicates that most people perceive of the reef as being coral only, and not as being coral, water, sand, islands etc. Because of this high correlation, only the item referring to the reef overall (Q30a) is included.

The remaining items were subject to scaling analyses involving cluster analysis with alpha maximization. The resultant scales were confirmed as being unidimensional by factor analysis.

Items were recoded where necessary so that the large values represented greater importance of the reef in terms of the holiday. Because the items being considered for the scales are from different questions, different metrics have been used. The agree/disagree items were measured on a five point Likert scale, thus having a range of 1 to 5. The importance items were measured on a four point, not at all important to very important, scale with a range of 1 to 4. The tourist's perception of coral (was it what was expected) was measured on a three point scale.

The open ended questions were recoded to form dichotomous variables for the purposes of the scale. The tourist either gave a reef related response, or did not. In order to be consistent with the magnitude of the other items, reef related responses were rated at 4, with responses that were not reef related scoring 0. The slight differences in these metric systems were not regarded as being consequential.

During the scaling procedure, the item relating to strict controls to stop people harming the reef, and the consumer surplus entry fee, were found not to correlate with the other reef items and detracted from the reliability of the scale. The control item had very little variation in response with the majority of respondents replying strongly agree to this item. The entry fee is confounded by many other variables including the tourists' ability to afford a fee, their experience with paying entry fees to national parks, and a number of other issues (see Hundloe, Vanclay & Carter 1987).

The final scales in their alpha maximized form comprise the following:

REEFNESS (to apply to all respondents)

Q 43 Item 1 (beauty)

Q 43 Item 2 (world wonders)

Q 30 (a) (importance of reef in holiday)

Q 29 IMP 4 (importance of seeing coral)

REASON (reef given as a reason for coming to north Queensland)

CORALNESS (to apply only to respondents who have seen coral)

ALL THE REEFNESS ITEMS PLUS THE FOLLOWING

LIKE (reef given as a liked feature of north Queensland)

BEST (reef mentioned in relation to best experience)

Q 21 (coral perception)

Q 43 Item 9 (coral colour)

The five item Reefness scale had a mean internal correlation of .2796 and a Cronbach's Alpha of .6599. Scale scores were calculated by Likert's summated ratings, i.e. adding across all items of the scale. This produced a range of 4 to 22.

The nine item Coralness scale had a mean internal correlation of .2006, a Cronbach's alpha of .6937, and a range of 6 to 38.

In this form, scale scores are hard to interpret because there is no meaning to the measurement scale. Because the items themselves have different metrics, the normal procedure of expressing scales in terms of the original metric was not possible. Scales were therefore expressed as a percentage of the maximum possible value obtainable for that scale. The attached SPSS-X command file illustrates how this was done.

Because of the large number of tourists who had not seen coral when they were interviewed, there are 138 missing cases for the Coralness scale.

The Cronbach's Alpha values for the two scales are not high, despite being the maximum that could have been attained with the original set of variables. This indicates that there is some inconsistency in responses between the items and that there is some error associated with the scale. However, for an ad hoc scale, the alpha values are still high enough to warrant further analysis with the scale. It is clear, though, that there will be some attenuation of correlations when this scale is used in analysis. In other words, the true correlation between the Reefness concept and any other variable will be higher than that obtained by calculating the correlation with the Reefness scale. The Reefness scale does not perfectly measure the Reefness concept.

SPSS-X COMMAND FILE TO COMPUTE REEFNESS AND CORALNESS SCALES

```
TITLE 'ANALYSIS OF CORAL AND REEF ITEMS'
```

```
FILE HANDLE OUT/NAME='REEF.SYS'
```

```
FILE HANDLE IN/NAME='COT.SYS'
```

```
FILE HANDLE COR2/NAME='REEF9.COR'
```

```
FILE HANDLE COR1/NAME='REEF5.COR'
```

```
GET FILE=IN
```

```
COMPUTE CBEST=BEST
```

```
RECODE CBEST (5,8,14,20=2) (1,15=18)(6,7,22=51)(9=-9)
```

```
(21=23)(4,16,17,12=52)(3,10,11=53)
```

```
(25=52)(30=53)(28=51)(26=2)(27,29=18)
```

```
COMPUTE BESTREEF=0
```

```
IF (CBEST EQ 2) BESTREEF=4
```

```
COMPUTE SRREEF=0
```

```
IF (SR1 EQ 22 OR SR2 EQ 22 OR SR3 EQ 22) SRREEF=1
```

```
IF (SR1 EQ 9 OR SR2 EQ 9 OR SR3 EQ 9) SRREEF=2
```

```
IF (SR1 EQ 29 OR SR2 EQ 29 OR SR3 EQ 29) SRREEF=3
```

```
IF (SR1 EQ 31 OR SR2 EQ 31 OR SR3 EQ 31) SRREEF=4
```

```
VARIABLE LABELS SRREEF 'SPECIFIC REASON REEF RELATED'
```

```
VALUE LABELS SRREEF 0 'NO REEF' 1 'REEF ISLANDS' 2 'REEF'
```

```
3 'SNORKEL' 4 'DIVE'
```

```
RECODE MC1 TO MC6 (2=0)
```

```
COMPUTE NMEANSEE=MC1+MC2+MC3+MC4+MC5+MC6
```

```
IF (MC6 EQ -9) NMEANSEE=0
```

```
MISSING VALUES NMEANSEE (0)
```

```

MISSING VALUES I1 TO I9 (-9,6,7)
COMPUTE NEWRIMP=RIMP
COMPUTE NEWCIMP=CIMP
COMPUTE NEWIMP4=IMP4
COMPUTE NEWIMP22=IMP22
COMPUTE NEWIMP23=IMP23
RECODE NEWRIMP NEWCIMP NEWIMP4 NEWIMP22 NEWIMP23 (5=4)
COMPUTE NEWI1=I1
COMPUTE NEWI2=I2
COMPUTE NEWI7=I7
COMPUTE NEWI9=I9

COMPUTE LIKEREEF=0
IF (LNQ1 EQ 5 OR LNQ2 EQ 5 OR LNQ3 EQ 5) LIKEREEF=4

COMPUTE SRREEF2=SRREEF
RECODE SRREEF2 (1=0)(2,3=4)
RECODE NEWI1 NEWI2 NEWI7 (5=1)(4=2)(2=4)(1=5)
RECODE NEWRIMP NEWCIMP NEWIMP4 NEWIMP22 NEWIMP23
  (1=4)(2=3)(3=2)(4=1)
COMPUTE REEFNESS=0
COMPUTE CORALNES=0
VARIABLE LABEL REEFNESS 'INDEX OF REEF ITEMS, ALL RESPONDENTS'
  / CORALNES 'INDEX OF REEF ITEMS, CORAL SEEN ONLY'
  / NMEANSEE 'NUMBER OF DIFFERENT WAYS SEEN CORAL'
  / SRREEF2 'SPECIFIC REASON REEF RELATED FOR SCALE'
  / LIKEREEF 'LIKES ABOUT NQ INCLUDED REEF'
  / BESTREEF 'BEST EXPERIENCE WAS REEF RELATED'
VALUE LABELS SRREEF2 LIKEREEF BESTREEF 0 'NO REEF' 4 'REEF'

COMPUTE REEFNESS=RND(((NEWI1+NEWI2+NEWRIMP+NEWIMP4
+SRREEF2)-4)/18*100)
COMPUTE CORALNES=RND(((NEWI1+NEWI2+NEWRIMP+NEWIMP4
+LIKEREEF+BESTREEF+SRREEF2+CORALP+NEWI9)-6)/32*100)

FREQUENCIES VARIABLES=REEFNESS CORALNES /STATISTICS

PROCEDURE OUTPUT OUTFILE=COR1
PEARSON CORR SRREEF2 NEWRIMP NEWIMP4 NEWI1 NEWI2
  /OPTIONS 7

PROCEDURE OUTPUT OUTFILE=COR2
PEARSON CORR SRREEF NEWRIMP NEWIMP4 NEWI1 NEWI2
  NEWI9 CORALP BESTREEF LIKEREEF SRREEF2
  /OPTIONS 7

SAVE OUTFILE=OUT

FINISH

```

Collapsing Responses of Open Ended Questions

Collapsed response followed by original responses.

REASON FOR VISITING NORTH QUEENSLAND THIS HOLIDAY

Weather	Social
weather	meet people
	show friends around
Reef	sex
reef	honeymoon
see islands of the reef	socializing
Relaxation	Work
relax	work
get away from work etc	attend conference or work
	look for work
Sightseeing	Unique Environment
scenic beauty	untouched environment
heard it was nice	unique area
variety of things to see, do	remoteness
look around see things	rainforest
New	Repeat Visit
haven't been before	repeat visit
change, somewhere different	haven't been for a while
Water activities	Money
snorkelling	cheap holiday
beaches	value of the Aust Dollar
swimming	
fishing	(excluded from analysis)
to dive	facilities for kids
Part of Trip	seafood
part of trip	bushwalking
Visit Friends	
visit friends or relatives	

LIKES ABOUT NORTH QUEENSLAND

Climate
weather

Rainforest
rainforest

General Atmosphere
physical freedom
sights
sub-tropical environment
architecture
unspoilt areas
natural beauty
greenness
everything
clean
not too many people
atmosphere

Different
unpredictable
variety
different

Islands
islands

Water Activities
swimming
diving
fishing

Reef
reef

A Particular Resort
recreation facilities
well organized hotels
a particular resort

The Sea
beaches
sea water
calm seas

Seafood
seafood

Relaxed
relaxed

Costs
cheap accommodation
costs (cheap)

Friendly People
friendly people

Easy Access
easy access

Natural History
marine and bird life
mountains
national parks
natural history
tropical vegetation

(excluded from analysis)
not much

DISLIKES ABOUT NORTH QUEENSLAND

Nothing
nothing

Nasties
stingers
dirty water at beach
mosquitoes and insects

Weather
rain
humidity
cyclones

Transport
roads
bad drivers
distances
lack of petrol stations
limited access to Nat Parks
transport

Over development
over development
destruction of environment
loss of rainforest
sugar cane

Resorts
characterless resorts
standard of accommodation
lack of communication facilities
lack of interpreters
food
related to particular resort

Unfriendly People
hoons
too many foreigners
staff indifference to tourists
unfriendly people
too many people

Other
over-exaggerated in media
politics or Joh
no surf
shopping hours
litter
costs (too high)
lack of information
towns

BEST EXPERIENCE THIS HOLIDAY

Seeing the Reef
snorkelling on the reef
Agincourt Reef
reef walking
diving
seeing the reef
islands

Relaxing
being here (relaxing)
relaxing

Friendly People
met nice person/people
visiting friends/relatives
friendly people
nightlife
drinking

Event Outside Region
an event outside region

Sea Environment/Activities
resort beaches
sunshine
swimming
fishing
sailing

Mainland Places
sightseeing
seeing rainforest
Cape Tribulation
seeing wildlife

Other
good accommodation
plane flight
food
other activities (non-reef)

(excluded from analysis)
don't know

WORST EXPERIENCE THIS HOLIDAY

None
none

Travel

Kuranda train trip
motor accident/breakdown
road to Cape York
roads
rough boat trip
helicopter trip
train trip up from Brisbane
finding Port Douglas
airlines
distances

Related to Other People

unpleasant people
related to other people

Weather

weather
flooding

Personal Accident/Misfortune

headache sick
running aground
hangover
personal accident
theft

Bad Accommodation

bad food
bad accommodation

Travel Problems

regulations
lack of accommodation
bookings messed up
lack of money

Insects Stingers

insects stingers

Other

Townsville environment
early closing times
seeing dead coral

WORRIES ABOUT VISITING NORTH QUEENSLAND

No Worries

no worries

Weather

weather

Risks

uncertainty
insecurity
finding accommodation
running out of money
leaving on time
travelling alone

Travel

mechanical problems
transport, air problems
distance to travel
suitable clothing
flying

Dangerous Animals

stingers, sharks, snakes
insects

Health

sick from food, water
health

Things at Home

leaving house empty
time
kids back home
business commitments

Theft/Loss

lose luggage, money
theft

Other People

wouldn't meet people
other people may spoil trip
being alone at Christmas

LIMITING FACTORS IN CHOICE OF HOLIDAY DESTINATION

Money money	Travel Risks hygiene crime
Time time	Politics politics
Nothing nothing	Distance distance
Environmental Factors environmental factors climate	Children school holidays facilities for children
Work Commitments work commitments	Other avoiding school holidays value for money recreational facilities
Personal Factors lack of motivation other commitments opportunity health	

PHYSICAL FEATURES REQUIRED OF A HOLIDAY DESTINATION

Facilities good roads good accommodation comfort cleanliness good food good advertising safety camping grounds/facilities facilities good restaurants must cater for kids sporting activities	Sun and Sand weather beaches fishing proximity to water sunshine tropical location
Natural Environment primitive environment natural environment scenic beauty rainforest wildlife blend of nature and development mountains	Variety new things variety variety of environments historical interest excitement not of western mould depends on holiday
	Peace and Quiet peace and quiet quiet privacy not too many people
	(excluded from analysis) don't know

Collapsing Multiple Responses

When multiple responses are recorded, i.e. where a respondent is able to provide more than one answer to a particular question, normally each response is different. There would be little point in recording that a respondent regarded the reef as important for their first response, and then repeating this response for their second (or more) response. Because in this study multiple responses have been collapsed into more comprehensive categories, there is a possibility that a respondent would have the same collapsed response for their first and second or greater responses. For example, if a respondent gave as their first response 'peace and quiet', and 'not too many people' as their second response to their requirements of a holiday destination, after collapsing, this respondent would have the same responses for their first and second responses.

The SPSS-X Multiple Response procedure percentages tables based on respondents (cases). However, it does not check against repetition of responses. If repetition occurs, the percentages will be inflated by the proportion of repetition. Where collapsing of multiple responses occurs, it is important that repetition of responses be deleted. This is done by comparing second responses to first responses. Where the same, the second response can be changed to a missing value, as the following SPSS-X command file demonstrates.

There are no statistics that can be performed on multiple responses, since it is not possible to define probabilities. Care must be taken when interpreting multiple responses to allow for the possibility of chance differences. Only major and meaningful differences between groups have been discussed in this report.

SPSS-X COMMAND FILE TO DEMONSTRATE DELETION OF REPETITION OF MULTIPLE RESPONSES

```
TITLE 'COLLAPSING OF MULT RESPONSES'
FILE HANDLE IN/NAME='REEF.SYS'
GET FILE=IN

RECODE DLNQ1 DLNQ2 DLNQ3 (1,18,26,30=37)
(2,4,5,20,27=35)
(3,6,31=50)
(12,10,8=7)
(14,22,23,24,34=9)
(13,21,32,36=51)
(11,16,17,19,25,28,29,33=52)/
LNQ1 LNQ2 LNQ3 (32,36,37,23=35) (18,20=31)
(3,26=10)(16,33=13)(8=21)(30,27,14=50)
(1,4,12,11,6,7,17,22,28,29=38)/
SR1 SR2 SR3 (5,7=101)(9,22=102)(10,15,29 THRU 31=103)
(1,19,26,35,37=104)(18,33=105)(3,13,17,23=106)
(14,16,27,32=107)(2,12=108)(11,20,25=109)
(4,6=110)(28,34,36=-1)/
W1 W2 W3 (10,21,23,24=51)(6,15=52)(22,25,26=53)
(1,2,5,7,17,20=54)(3,9,11,18,19=55)
(16=12)(13=14)/
LF1 LF2 LF3 (5,16=51)(7,17,19=52)(8=15)(9,13=53)
(10,14,18,20,21=54)/
PF1 PF2 PF3 (1,4,5,13,29,31,33=4)
(2,6,20,21,19,36,37=6)
(3,10,15,35=3)(7,11,12,16,23,24=7)
(8,9,14,17,18,25,26,27,28,30,32,34=30)
```

ADD VALUE LABELS DLNQ1 DLNQ2 DLNQ3 50 'WEATHER' 51 'NASTIES'
 52 'OTHER'/
 SR1 SR2 SR3 101 'NEW' 102 'REEF'
 103 'WATER BASED ACTIVITY'
 104 'SOCIAL' 105 'RELAX' 106 'UNIQUE ENV'
 107 'SIGHTSEE' 108 'MONEY' 109 'WORK'
 110 'REPEAT VISIT'/
 W1 W2 W3 51 'THINGS AT HOME' 52 'THEFT LOSS'
 53 'OTHER PEOPLE' 54 'RISKS' 55 'TRAVEL'/
 LNQ1 LNQ2 LNQ3 50 'WATER ACTIVITY'/
 LF1 LF2 LF3 51 'CHILDREN' 52 'OTHER' 53 'TRAVEL RISKS'
 54 'PERSONAL'/

(* Recoding of collapsed multiple responses to ensure no repetition*)

IF (DLNQ2 EQ DLNQ1) DLNQ2=-9
 IF (DLNQ3 EQ DLNQ1) DLNQ3=-9
 IF (DLNQ3 EQ DLNQ2) DLNQ3=-9
 IF (LNQ2 EQ LNQ1) LNQ2=-9
 IF (LNQ3 EQ LNQ1) LNQ3=-9
 IF (LNQ3 EQ LNQ2) LNQ3=-9
 IF (SR2 EQ SR1) SR2=-9
 IF (SR3 EQ SR1) SR3=-9
 IF (SR3 EQ SR2) SR3=-9
 IF (PF2 EQ PF1) PF2=-9
 IF (PF3 EQ PF1) PF3=-9
 IF (PF3 EQ PF2) PF3=-9
 IF (W2 EQ W1) W2=-9
 IF (W3 EQ W1) W3=-9
 IF (W3 EQ W2) W3=-9
 IF (LF2 EQ LF1) LF2=-9
 IF (LF3 EQ LF1) LF3=-9
 IF (LF3 EQ LF2) LF3=-9

MISSING VALUES DLNQ1 DLNQ2 DLNQ3 (-9,0,99)
 MISSING VALUES RE1 RE2 RE3 (-9,6,7)
 ADD VALUE LABELS PF1 PF2 PF3 37 'DEPENDS ON HOLIDAY'
 MISSING VALUES PF1 PF2 PF3 (-9,0,22)

MULT RESPONSE GROUPS=DISLIKES (DLNQ1 DLNQ2 DLNQ3(1,52))
 LIKES (LNQ1 LNQ2 LNQ3 (1,50))
 LIMIT (LF1 LF2 LF3(1,54))
 REASON (SR1 SR2 SR3(1,110))
 WORRIES (W1 W2 W3(1,55))
 PHYS (PF1 PF2 PF3(1,30))
 /VARIABLES=PF1 PF2 PF3 (1,30)
 DLNQ1 DLNQ2 DLNQ3(1,52)
 SR1 SR2 SR3 (1,110)
 LF1 LF2 LF3 (1,54)
 W1 W2 W3 (1,55)
 LNQ1 LNQ2 LNQ3 (1,50)
 TRIP(1,2) DISTATUS(1,3) TSTAT (0,4)
 FTNQ(1,2) CORALEXP(1,3) DIVETOURL(1,2)
 FISHSTAT(1,2)

/TABLES=LIKES DISLIKES WORRIES REASON PHYS LIMIT BY FTNQ
/STATISTICS 2
FINISH



bib# 1788

338.479

1943

VAN

1988