

# **Reef tourism drivers and trends: synthesis report**

## **Analysis of recreational and tourism use and impact on the Great Barrier Reef for managing sustainable tourism**

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TTNQ

Tourism Whitsundays

# 1. Introduction

The aim of this report is to present a synthesis of research undertaken at James Cook University on aspects of reef tourism on the Great Barrier Reef (GBR). Funding for the research was provided by the Australian Government's Marine and Tropical Sciences Research Facility (MTRSF) program. The report examines trends and drivers of tourism on GBR and compares results obtained from three related visitor monitoring studies. The discussion begins with an analysis of events that may have affected tourism to the Great Barrier Reef followed by a discussion of data collected from visitors. The report then compares data collected during the three surveys. Finally, the report highlights information gaps in reef tourism research and provides suggestions for future reef tourism research.

## 1.1 Overview of data collection

Data used in this synthesis report was collected by three related visitor monitoring surveys. Results of the Great Barrier Reef (MTRSF Program 4.8.6) monitoring program are discussed first followed by a discussion that includes data collected from the Wet Tropics Rainforest visitor survey (MTRSF Project 4.9.2) and the Cairns Airport monitoring survey (MTRSF Project 4.9.2).

### Great Barrier Reef visitor monitoring project (MTRSF Program 4.8.6)

The principal methodology for this research was visitor surveys distributed by participating reef tour boat operators. Crew from these marine tourism operators distributed and collected the surveys at three locations across the Great Barrier Reef: Tropical North Queensland, the Whitsundays and the Capricorn region. The majority (61.1%) of surveys were collected in Tropical North Queensland, followed by 30% collected from the Whitsundays. These represent the two most important gateways for tourists visiting the reefs. According to GBRMPA figures (GBRMPA 2009), more than 85% of visitors visit the reef within the Cairns, Port Douglas and Whitsunday areas, which collectively comprise less than 10% of the marine park. A total of 13 operators were involved in this research, representing a wide variety of operator types, sizes, activities, length of trip and markets (Table 1). Results of the survey are de-identified to protect the confidentiality of participating operators. As a consequence, specific results of the visitor survey are not attributable to any participating operator.

Table 1: The range of operators who assisted in collecting the surveys.

	Pontoon	Mooring	Island	Day	Overnight	Sailing	Motor	Seaplane	Shore-based
1	✓			✓			✓		
2		✓		✓			✓		
3		✓		✓		✓			
4		✓			✓	✓			
5		✓		✓			✓		
6		✓			✓		✓		
7		✓		✓		✓			
8	✓			✓			✓		
9	✓			✓			✓		
10			✓						✓
11			✓						✓
12		✓		✓				✓	
13		✓			✓	✓			
Total	34.3%	57.1%	17.1%	68.6%	22.9%	20.0%	54.3%	8.6%	17.1%

Surveying was carried out on a monthly basis with surveys provided to the operators in the first week of each month. To minimize the pressure placed on crew and tourists' time no operator was asked to distribute more than 60 surveys each month. Crew were encouraged to develop random sampling techniques to suit their boats and operations (e.g. distribute the surveys each Tuesday to every third passenger), and finally, tourists were offered complimentary postcards to thank them for completing the survey.

The data collected in the survey have been designed to complement other data sources, such as Tourism Australia's national and international visitor surveys. Whilst the information collected as part of this project does not report absolute changes in visitor numbers, it is able to detect changes in the visitor experience and travel behaviour. Readers should use these findings in conjunction with data provided by regional and state destination marketing organisations and Tourism Australia. A copy of the GBR survey instrument is included in Appendix A for reference.

The choice of methodology, which was based on budgetary constraints, has provided the researchers with both advantages and limitations. The most obvious advantage of this research methodology is its cost effectiveness. Additional advantages have been identified over the course of the research, pertaining primarily to the high involvement of the operators who provide assistance with survey distribution. Such advantages include a vested interest by tourism operators in accessing the results, as they have been highly involved in the research.

The methodology has been peer reviewed in a number of journal articles, most comprehensively in Coghlan & Prideaux (2009a) where the establishment of the methodology was outlined in detail. A review of the methodology, including representativeness and limitations, has been provided in previous reports (c.f. Coghlan & Prideaux, 2012a, b, c). In particular, certain markets may be under-represented, and the randomness of the data collection procedure is highly dependent on the crews who collect the surveys.

#### **Wet Tropics rainforests visitor monitoring project (MTSRF Project 4.9.2)**

Primary data were collected from visitors using a self-completed survey instrument distributed at a number of locations in the Wet Tropics region. To develop a representative distribution system, surveys were collected at a number of sites by employees of participating tour operators and on-site survey staff employed by the project.

Industry support was sought and discussions were held with the operations managers and business directors/owners of a number of businesses that operated in the rainforest. Three large and one small tour operator and two visitor attractions offered their support. Tour operators distributed surveys via tour guides on the Atherton Tablelands and in the Daintree National Park. Visitor attraction staff, under the guidance of operations managers, distributed surveys to visitors at these sites. This limited the randomisation of the data, but was seen to be a necessary and acceptable compromise to ensure a satisfactory level of responses.

The two sites were Mossman Gorge and the Daintree Discovery Centre. Both sites are visited by a large number of tourists. Trained research assistants spent one day each month surveying visitors at Mossman Gorge and one day each month at the Daintree Discovery Centre, alternating surveying days between weekdays and weekends. The survey contained a combination of questions on socio-demographics, motivations (using a Likert scale), behaviours, travel patterns and satisfaction.

#### **Cairns Airport visitor monitoring project (MTSRF Project 4.9.2)**

The Cairns Airport visitor survey was collected at the domestic terminal of the Cairns Airport. Surveying was undertaken twice a month by trained research assistants. Visitors were approached and asked if they wished to participate in the survey. If a positive response was received a follow up question was asked to determine if the potential respondent was a

resident of North Queensland or a visitor to the region. If the person indicated they were a local resident they were thanked for their time and the interview was terminated. A cover page with the aims of the study and instructions was provided to every respondent. The researcher remained close to the participants to clarify any questions during the completion of the questionnaire. Many respondents reported finding that the experience of completing a survey was a useful exercise that allowed them to reflect on their experiences, and contribute their opinions on aspects of their holiday.

### **1.3 Limitations**

The approach adopted in this research has a number of limitations that should be considered before generalising results. First, seasonality was a major limitation in the Wet Tropics rainforest survey. During the 'low tourist season' (January to March and November to December) many rainforest tour operators either closed for the season or operated smaller numbers of tours to WTWHA locations. Moreover, during this period the 'wet season' generated long periods of heavy rainfall and localised flooding. These conditions deterred self-drive visitors from travelling to rainforest locations such as Paluma, Daintree and Mossman Gorge. As a consequence, it was difficult to achieve a high rate of sampling during this period.

Another limitation in each survey was the potential for specific nationalities being overlooked because survey instruments were not available in their native language.

The data collected in this research is specifically designed to track changes in motives and test a range of other aspects of visitor behavior. It *was not designed* to identify changes in visitor numbers to the region. Data of this nature are compiled by Tourism Australia through its National Visitors Survey and International Visitor Survey series.

A final limitation that should be considered is the potential for social desirability bias where respondents over-report 'good' behaviours and under-report 'bad' or 'least desirable' behaviours. For this reason, care should be exercised if data on visitor intentions are to be used in policy decisions.

## 2. Analysis of drivers, trends and crises

The following discussion examines the concept of drivers and trends and identifies how these factors combined with crises can impact on GBR tourism.

### 2.1 Drivers of reef tourism

In this section, tourism-relevant events that have taken place since the start of the project in 2006 are considered in the context of tourism on the GBR. Events of this nature include those that occur at a local level and influencing the supply-side of reef tourism, and those that occur outside of the region and impact on the demand-side aspects. Issues that affect destination image and how events are portrayed in the media are also considered.

When considering how events impact on tourism flows it is useful to identify the major drivers and trends operating in the specific market being investigated and to consider how various types of crises may also affect tourism demand. Drivers are defined by Prideaux (2009) as *'those factors that underpin change and cause it to occur'*. Numerous drivers operate at international, national, regional and personal levels. Global drivers include: changes in technology, major international events such as the Global Financial Crisis (GFC), the growth of the service economy, world economic growth, an increasing number and variety of destinations, climate change and global security issues. National drivers include economic conditions, political issues and demographic trends. Personal drivers that influence the individual's level of consumption of tourism products include: rising travel demand by baby boomers and younger generations, acceptance that change is a normal condition of life, growth in personal disposable income and the observation that travel is now an ordinary consumer good not a luxury. Collectively these drivers influence the demand for travel on personal, national and global levels.

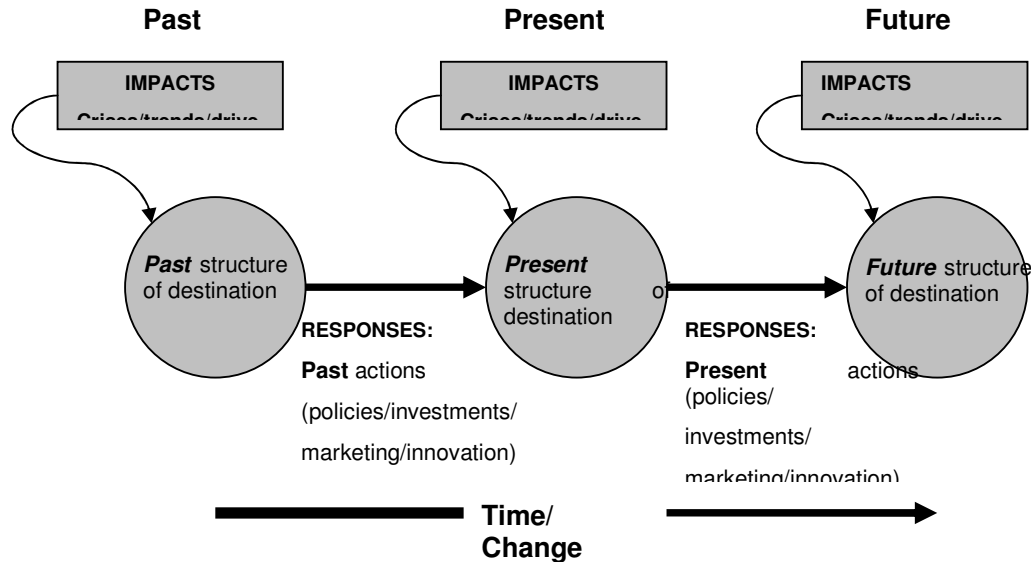
Trends are defined (Prideaux 2009) as *"... those sequences of events that can be identified in the present and which, unless remedial action is taken, will cause some magnitude of disruption, or progress, in the future"*. Several types of trends affect tourism:

- Short-term trends that affect the level of demand for specific destinations and market sectors
- Long-term trends where there has been a fundamental shift such as the emergence of new forms of tourism demand or return to a prolonged period of economic growth.

Crises are unexpected events that occur on a number of scales, from personal to global. Each crisis event is unique but generally has three distinct time periods: the period prior to the crisis, the period of the crisis and the period after the crisis. The ability of destinations to respond to each crisis period will be determined by their level of preparedness, the severity of the crisis and the time period that the crisis occupies.

The relationship between drivers, trends and crises and their impact on destinations is illustrated in Figure 1 (Prideaux, 2009). Crises, trends and drivers create *impacts* that must be met with *responses* that include policies, investments, innovation and marketing. The present is a reflection of how destinations have responded to impacts in the past while the future will be to some extent determined by how the destination responds to current impacts.





**Figure 1. The Role of Impacts and Responses in the present and future structures of destinations**  
(Source: Prideaux 2009)

The events outlined in Figure 2 have affected the Great Barrier Reef's tourism industry and the image of the reef as a desirable place to visit in a variety of ways. Some events, such as the Global Financial Crisis, increase in the value of the Australian dollar and cancellation of flights, had strong negative impacts and led to a fall in demand for visits to the region. Other events, including the introduction of additional airline seats, have positive impacts by increasing the capacity of the region to receive additional visitors.

Destination image is a key field of research within tourism marketing as tourists base their decision to visit a destination on how effectively the destination, or attraction, aligns its major 'pull' factors with tourists 'push' factors (Dann 1977; Crompton 1979). Push factors describe a range of factors including motivation, personal disposable income and values that govern the individual tourist's demand for travel. Pull factors are those attributes of a specific destination which appeal to tourists and, in the case of Tropical North Queensland, include the Great Barrier Reef and the Wet Tropics rainforests as well as the ability to rest and relax. Pull factors are highlighted and promoted through destination images in promotional literature (travel brochures, posters), and the general media (newspapers, magazines, television, books, movies) (Echtner and Ritchie 2003). Whilst promotional images are largely generated by the industry and its marketing bodies as they seek to create a positive destination image, the media is an independent force that, under certain "crisis" circumstances, may generate harmful images of the tourism industry in a region.

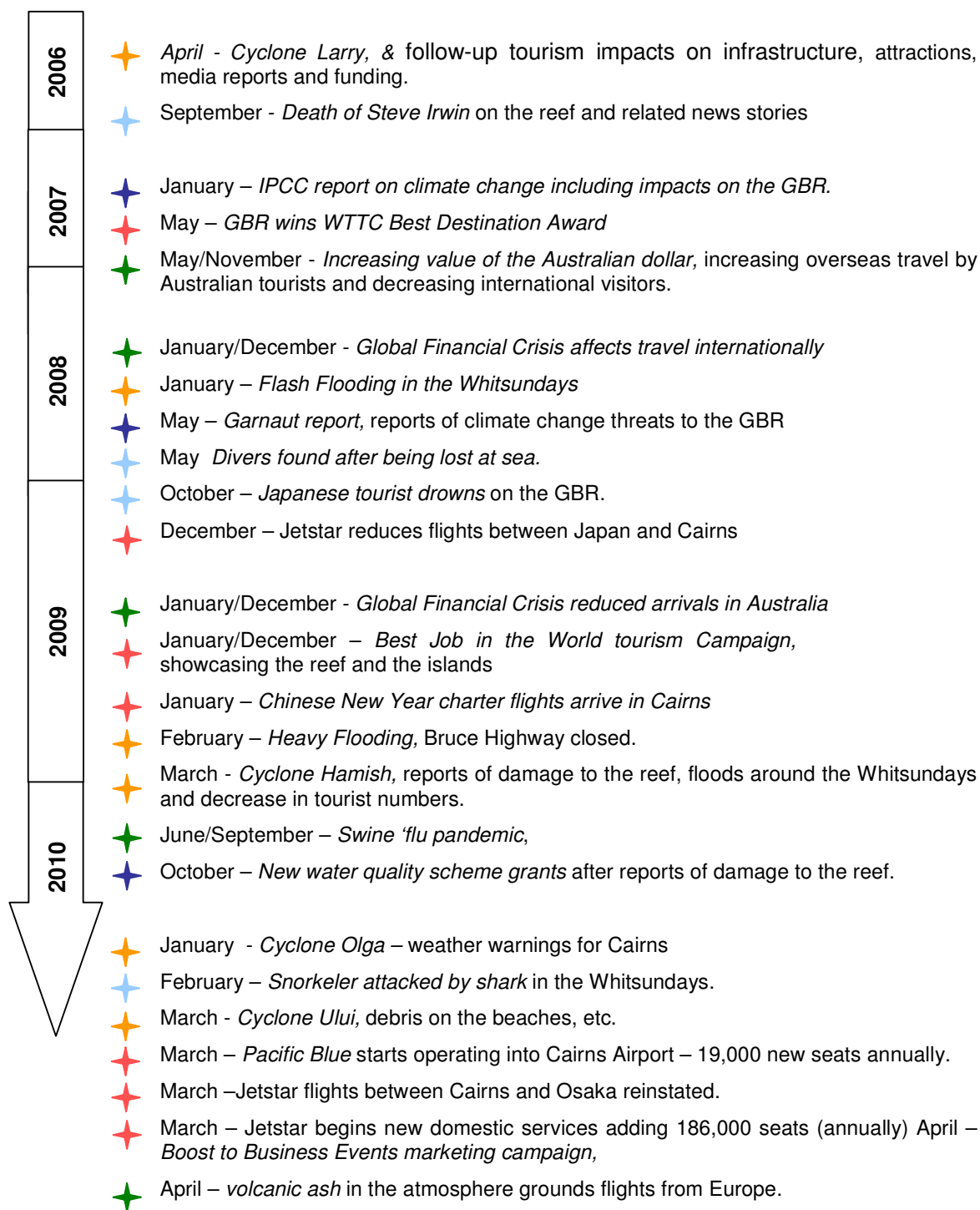


Figure 2. Description of events related to: destination management, natural resource management, localised natural disasters, incidents at the reef, events impacting on source markets.

Since data collection started in 2006, a number of natural disasters have occurred both within the GBR region and more globally with consequences for the region's tourist source markets. Four cyclones have been recorded in the region, causing floods, closing roads and airports and resulting in damage to the reef through wave action and marine debris. Boxes 1 and 2 illustrate how events such as a cyclone may influence reef tourism by affecting the natural resources which the tourism industry depends on and by preventing tourists from entering or leaving the region.

**BOX 1: Cyclone debris threat to Great Barrier Reef**

The Great Barrier Reef faces an environmental disaster as marine debris is swept out to sea, turning cyclone ravaged Whitsundays into a junkyard. Volunteers are in a race against time to stop tonnes of toxic debris lining the shores being dumped on fragile coral reef ecosystems in the world-renowned Whitsunday islands by a high tide. Experts fear that marine life including fish, turtles and dugong could be choked by the vast armada of post-cyclone rubbish.

**BOX 2: Caution urged after flash floods hit North Queensland**

Authorities in North Queensland are keeping a close watch on a low pressure system off the coast after flooding rains caught many people by surprise in the Whitsundays. More than 250 mm of rain fell on the region, with more heavy falls expected today. All flights in and out of the Whitsunday Airport have been cancelled due to the flooding, which has cut road access to Proserpine and Airlie Beach.

Other crisis events may occur on a global scale, such as the Global Financial Crisis of 2008–09 or the swine 'flu pandemic of 2009. A study by Cummings Economics (2009) reported the impacts of swine 'flu on tourism in Tropical North Queensland, suggesting that these were concentrated on the Japanese and Chinese markets and were less likely to have affected the European and Australian markets. Tourism Australia also reported that international visitors to Australia remained steady despite the tough conditions for tourism globally (Tourism Australia 2010).

The impact of events such as the GFC cannot be ignored in the context of reef tourism. An earlier review by Cater (2005) of the GBR marine tourism industry suggested that there is a strong correlation between stagnant visitor numbers (mid-1990's to present) and economic factors such as the Asian economic crisis, and social and political instability, e.g. September 11. While environmental threats, such as declining water quality and crown of thorns, are not the primary cause for stagnant visitor numbers, adverse media reporting based on concerns about climate change can be expected to have lasting impacts.

### Media coverage

Media coverage of GBR issues can have significant impacts on the public's image of the reef, generating both positive and negative images. For example, negative reporting, as described in Box 3 can have a negative impact on reef tourism. Media coverage following the 2007 IPCC report suggests that tourists will soon be faced with an aesthetically less pleasing reef and recommends that tourists visit the GBR before it dies. There is understandably a concern within the industry and management that media coverage of this nature influences visitation patterns on the reef, e.g. increasing rates of visitation in the short term and potentially decreasing in the long-term.

#### BOX 3: Doomsday talk on Barrier Reef angers tourism operators.

Tourism operators reliant on the Great Barrier Reef are battling a new menace they say is as damaging to their businesses as crown of thorns starfish. The North Queensland businesses claim publicity about climate change threatening the health of the reef system could have an adverse impact on tourism numbers. Peter Wright, owner of Port Douglas-based Poseidon Cruises and director of the Association of Marine Park Tourism Operators (AMPTO) said that if environmental research continued to dwell on the demise of the Reef, tourism operators might resort to a "come now or it might be too late campaign"

Courier Mail, Sep. 09, 2008



Tourism attractions that are at risk from climate change have become part of the "last chance" tourism phenomenon, where the selling point is to see a destination before it disappears, with notable examples being coral reefs, Antarctica, polar bears and so forth (Eijgelaar et al, 2010). Accepting that crisis events are not an exception to the norm and need to be incorporated into both business and destination business planning is an important step towards being able to respond to crisis situations in a manner that aids speedy post-crisis recovery.

The media can also assist the reef's 'pull' effect in major markets by creating positive images, e.g. marketing campaigns such as the "Best Job in the World" (Box 4, Figure 3) are reported to have reached an audience of about three billion people through the media coverage valued at AUD\$400 million, and 55,002,415 visits to the job's web page ([www.ourawardentry.com.au](http://www.ourawardentry.com.au)). This illustrates a particularly successful campaign designed to draw attention to the Great Barrier Reef and its status as an iconic tourist attraction.

#### BOX 4: Brit wins "best job in the world"

"The best job in the world campaign has had people from all corners of the globe talking since its launch in January and has become arguably the most sought-after job in the world" [Queensland Premier Anna Bligh]

Tourism Queensland spokesperson Anthony Hayes said earlier this week the competition had already generated more than \$110 million in international publicity. "The answer when things are going tough is you can complain about it or you can be more creative and more aggressive and try to get more people to come" he said.

ABC News, May 6, 2009.

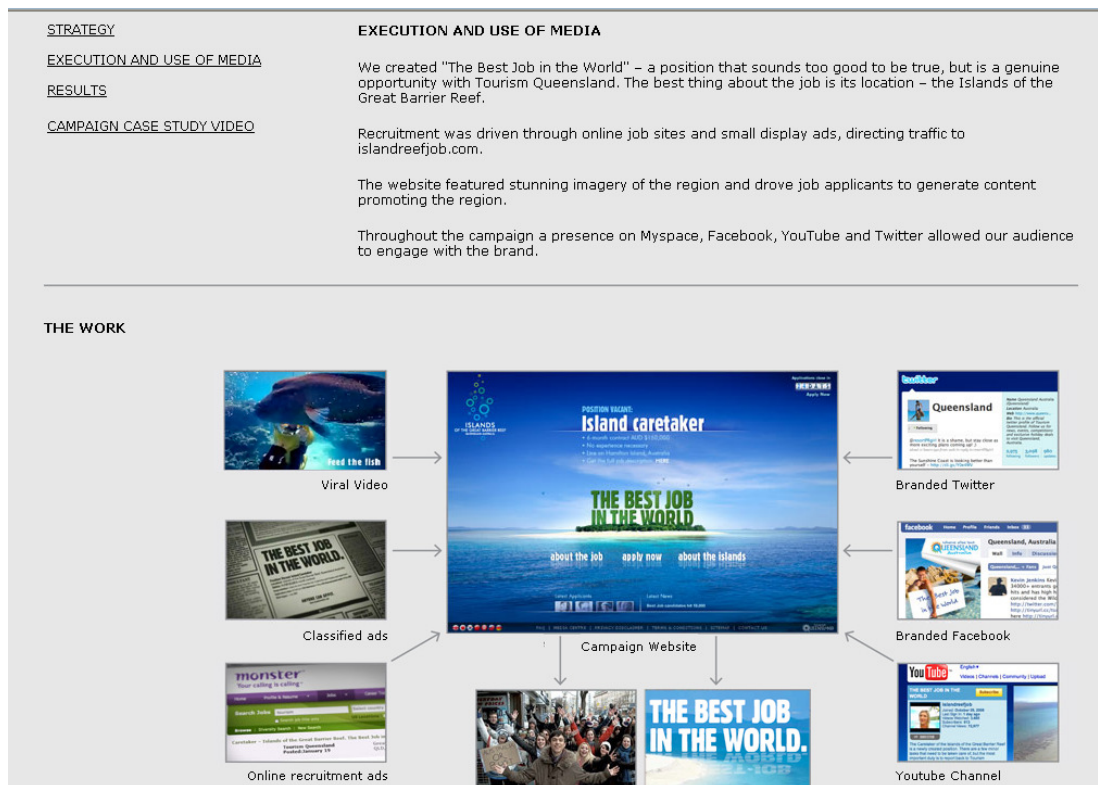


Figure 3: The "Best Job in the World" campaign and use of media from <http://www.ourawardentry.com.au/bestjob/execution-of-media.html>

#### The role of destination marketing organisations

Destination marketing organisations have an important role to play in promoting reef tourism by extolling positive images of the reef and working to reduce the impact of negative images. Box 5 illustrates how an organisation such as Tourism Tropical North Queensland may actively promote the Great Barrier Reef to a particular market – in this case the events

market, whilst Box 6 provides an example of a more ad-hoc response to events reported in the media.

**BOX 5: Reef lure good for business**

A 28% fall in the Far North's \$85 million a year events market has sparked a \$500,000 marketing campaign in southern states. Business Events Cairns and Great Barrier Reef launched the campaign yesterday funded by a Federal Government Grant of \$250,000 and \$250,000 from Tourism Tropical North Queensland and its members.... TTNQ chief executive officer Rob Giason said the advertisement would focus on the Great Barrier Reef as a draw-card with the aim of luring business visitors to hold their meetings, conferences or events before or after visiting the world heritage icon. ... He said the campaign would put Cairns and the reef into the minds of those planning events and the magazines chosen were those read by business men and women.

The Cairns Post, April 20, 2010

**BOX 6: Lost divers could boost adventure tourism**

International media interest in the story of a couple who spent 19 hours drifting in seas off Queensland's coast could boost tourism in the region, a tourism body says. ...

The survival story, which has been sold for a reported \$1.1 million, has scored headlines across the world which have seized on the couple's fear of sharks as they waited to be rescued. Tourism Whitsundays chief executive Peter O'Reilly said the spectacular headlines, particularly in the UK newspapers, could reaffirm Australia as the place for adventure tourism, which was a huge drawcard for European markets.

Brisbane Times, May 27 2008

**Demand-side issues**

The previous discussion focused on issues that affect the demand for reef experiences. There is also a need to focus on supply-side issues. The reef is located in a peripheral location relative to its major domestic and international visitor generating regions. There are two aspects of peripherality that need to be considered. The first aspect concerns the distance of major reef gateways (Tropical North Queensland and the Whitsundays) from major generating regions. The second aspect of peripherality is the distance the reef is from these key gateways. There is a direct relationship between distance and the cost and time taken for travel. As the time taken for travel and the cost of travel increase (Prideaux 2000) the potential size of the visitor market for a generating region, measured as first-time and repeat visitor numbers, declines. The second aspect of peripherality is the distance of the reef from the major gateways. For gateways such as Cairns, this results in reef trips that spend considerable time in transit between the reef and the port. Long transit times add to cost, reduce time spent at the attraction and may lead to boredom on the return transit.

Because the reef occupies a peripheral location relative to major generating markets, transport costs and the time of travel are major issues. The introduction of low cost carrier (LCC) air services in Australia has, to a large extent, negated many of the cost issues related to peripherality that were important in previous decades. As the cost of air travel has fallen, the region has become accessible to an increasing number of domestic visitors which is reflected in the introduction of additional seats into the Cairns market by all of Australia's domestic carriers in 2010.

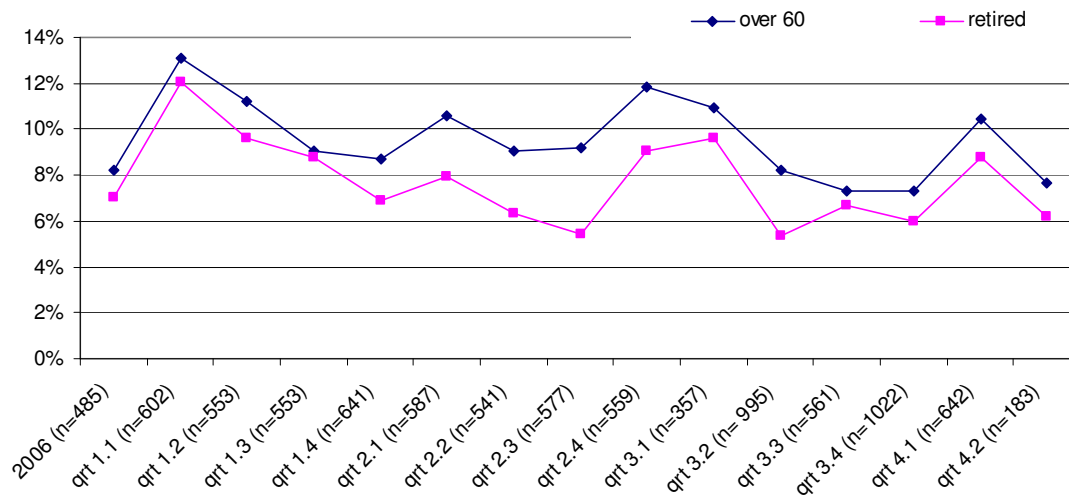
**2.2 Trends in reef tourism – Socio-demographic characteristics**

The following discussion highlights trends recorded in the data collected as part of project 4.8.6, *Analysis of recreational and tourism use and impact on the Great Barrier Reef for*

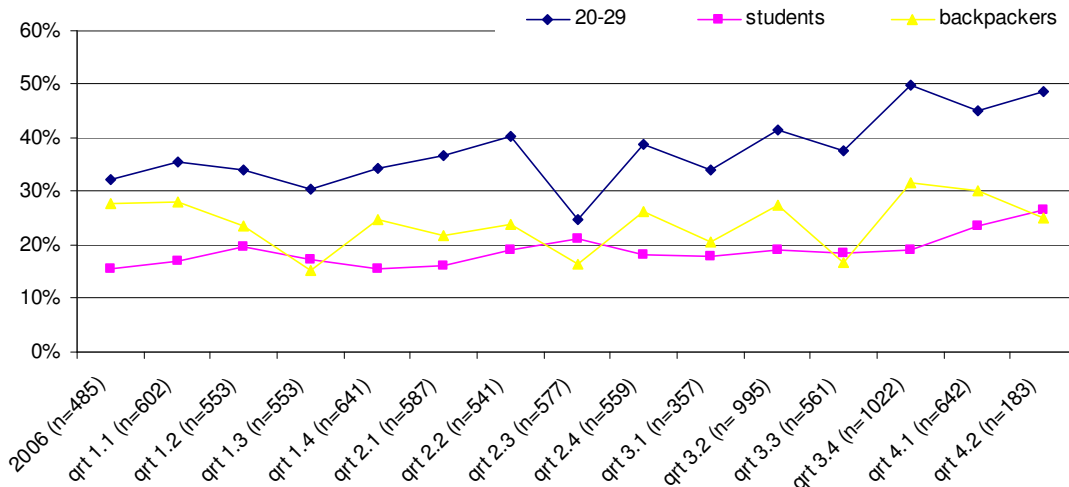


*managing sustainable tourism.* The surveys collected information on a range of visitor variables, including socio-demographics (gender, age, country of origin, occupation), travel behaviour (transport, accommodation, repeat visitation, information channels for choosing the destination and the operator) as well as behaviour at the reef and satisfaction with their reef experience. Based on the nature of these variables, it is likely that some are inter-related – a change in one, therefore, will lead to a change in the other. For instance, a decrease in the number of older visitors may lead to a decrease in retirees visiting the reef (Figure 4), whilst an increase in younger tourists may suggest an increase in younger respondents and students (Figure 5).

When considering overall visitor numbers, trends of this nature are best identified in visitor monitoring undertaken by Tourism Australia and reported in the National Visitors Survey and the International Visitors Survey. As previously discussed, our survey series performs a different role and reports on changes in visitor composition, activities and motivations. Examples of changes in the relationships between variables have been previously highlighted in the third annual report on reef visitation (Coghlan & Prideaux, 2012a).

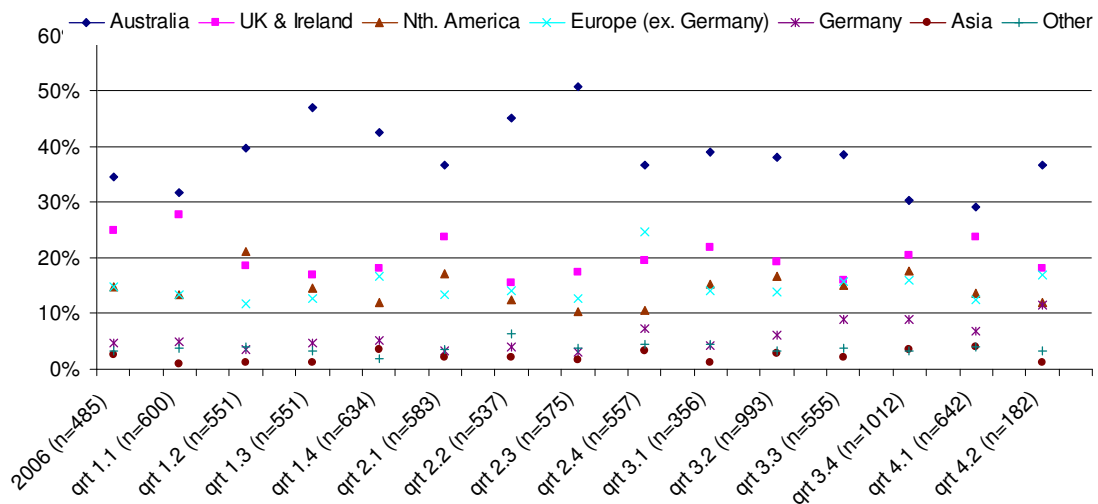


**Figure 4: Patterns of change in respondents over the age of 60 and patterns of change in respondents who are retired.**



**Figure 5: Patterns of change in respondents between the ages of 20–29, students, and respondents staying in backpacker accommodation.**

The previous discussion highlighted how a number of recent events have affected tourism demand, including the demand for visiting the GBR. The patterns of demand for domestic and international tourism have shown some fluctuations (Figure 6) which are linked to external events such as the GFC and variations in the value of the Australian dollar. For example, in 2009 the region recorded a slight decline in the number of domestic respondents from previous years. This is confirmed by the National Visitors' Survey, suggesting that Australians are travelling less or travelling overseas (Tourism Australia 2010, unpublished data).



**Figure 6: Fluctuation in patterns of domestic and international tourism during data collection.**

Results also suggest that despite concerns over media reports on the future of the GBR, it retains its position as the most important travel motivation to visit the region. The importance of the GBR has increased slightly over the past three years (Figure 7). This indicates the strength of the GBR “brand” within the region and how it complements other significant motivations, including enjoying the natural environment and its wildlife, seeing the GBR and opportunities to snorkel and dive, and enjoying the climate.



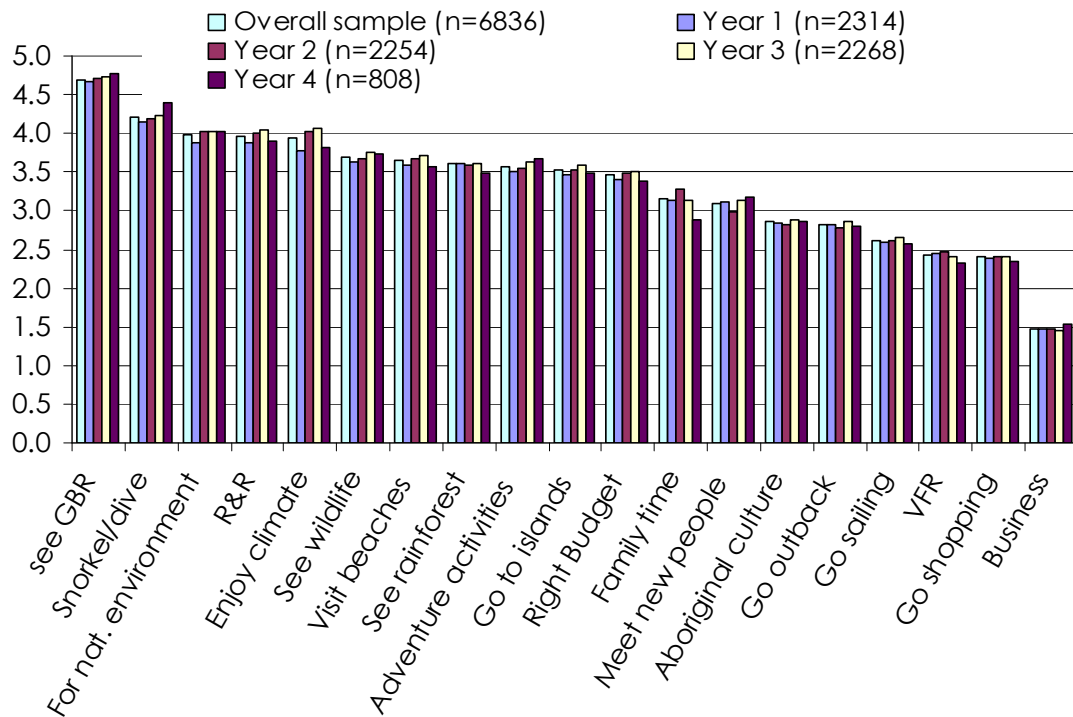
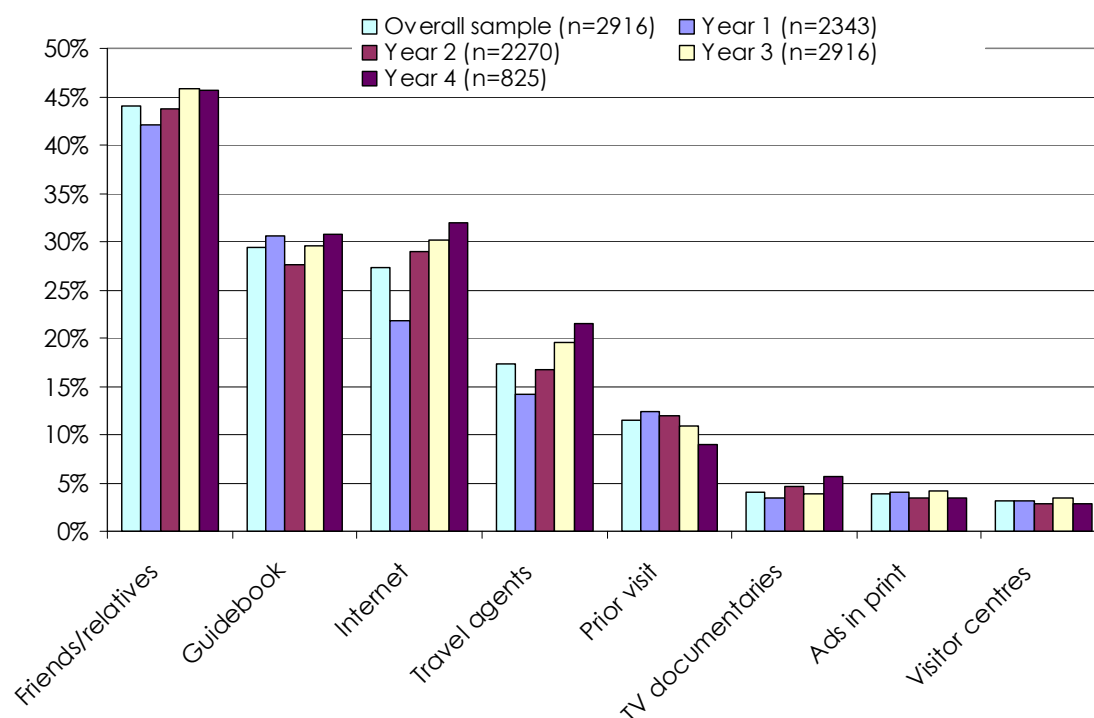


Figure 7: Travel motivations of respondents visiting the GBR region over the four years.

The proportion of repeat visitors to the region has been declining over time. Research undertaken by Moscardo et al. (2003) found that 25% of visitors were repeat visitors in the early part of this decade, whilst this project found that 24.0% were repeat visitors in 2007, 22.3% in 2008, 18.3% in 2009 and 13.9% in 2010. This represents a significant decrease in repeat visitation over the years ( $\chi^2 = 92.06$ ,  $p < 0.05$ ). In a similar vein, the number of respondents who report using previous visits as the basis for their decision to visit the region has also declined from 12.4% in 2007, 12.0% in 2008, 10.8% in 2009 and 9.0% in 2010. Instead, results suggest the growing importance of both travel agents and the internet in generating bookings (Figure 8).



**Figure 8. The information sources used by all respondents to plan their holiday.**

As with repeat visits to the region, repeat visits to the reef are also in decline; 2010 has seen a significant decrease in the proportion of repeat visitors to the reef, from 29.6% in 2007, 27.7% in 2008, 26.4% in 2009 and 23.0% in 2010 ( $\chi^2=6.577$ ,  $p<0.05$ ). Instead, it may be noted that significantly more respondents had visited other reefs in 2010 (48.5%) than in previous years, (48% in 2009, 43% in 2008 and 47% in 2007,  $\chi^2=13.083$ ,  $p<0.05$ ). More visitors had been to the Caribbean and Hawaii than in previous years, whilst fewer had visited reefs closer to home around South East Asia and the Indian Ocean (Figure 9). This may also be linked to economic issues around the state of the economy in countries such as the USA, which are source markets for the destination.

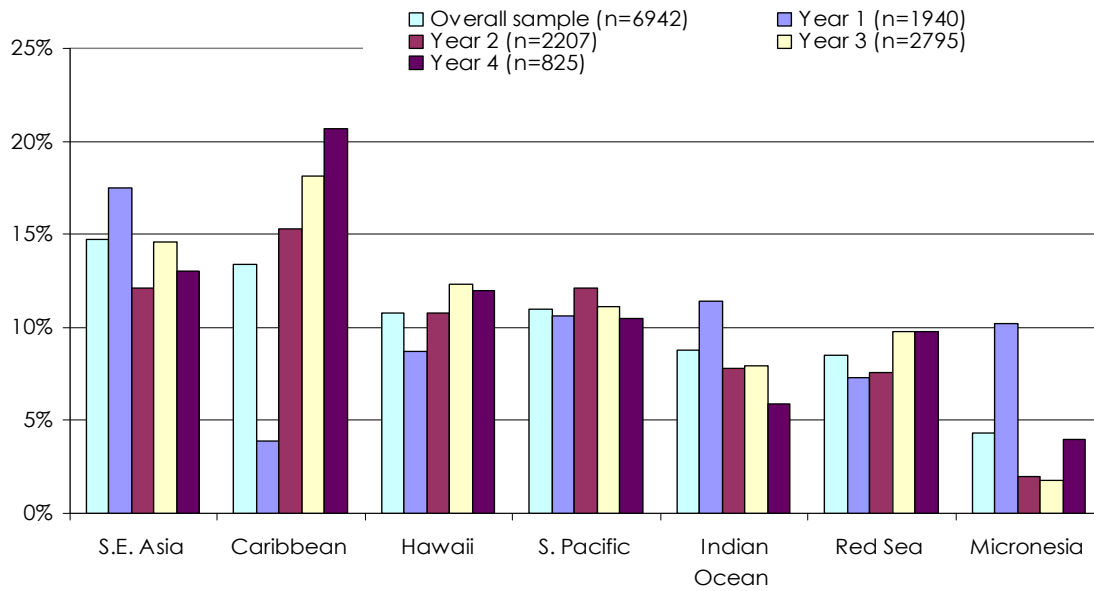


Figure 9. Reefs visited by all respondents before this visit to the GBR.

Whilst many respondents continue to rely on word-of-mouth information channels when choosing their operator, commercial agents are playing an increasingly important role in promoting tours ( $\chi^2=243.369$ ,  $p<0.05$ ), and price also continues to be an important factor (Figure 10). The type of activities available, as well as the tour destinations on offer (pontoons, islands, outer reef, etc) are also playing an increasingly important role in respondents' choices, perhaps reflecting a preference for greater product diversification as suggested by Moscardo et al. (2003).

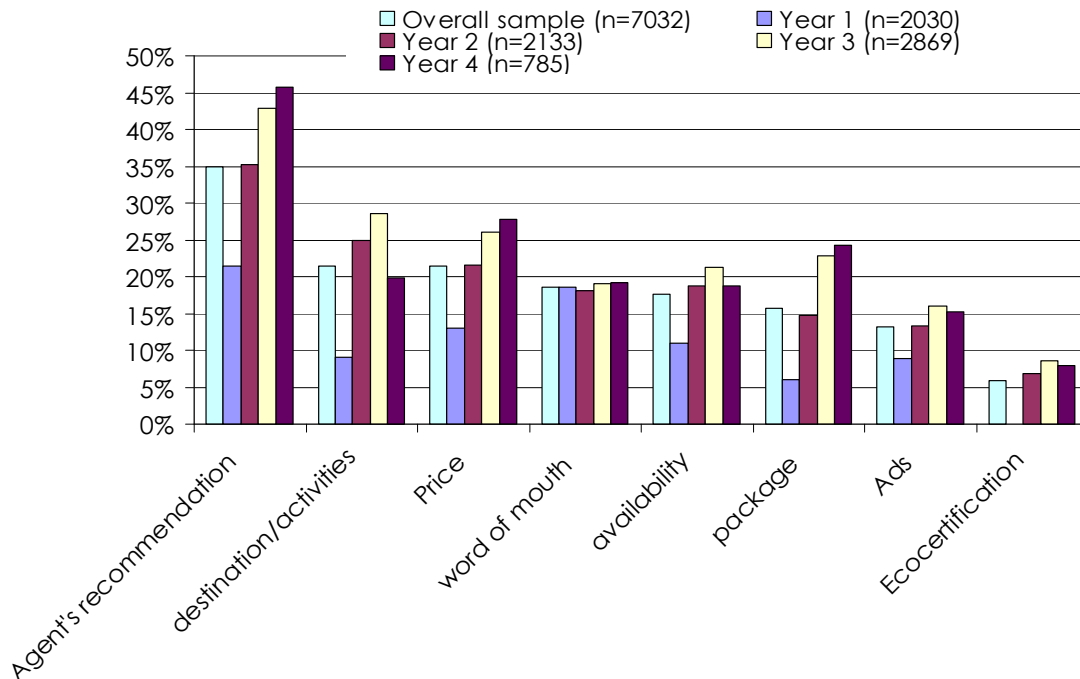


Figure 10: Decision-making factors used by respondents to choose their reef tour operator.

Another interesting trend that has emerged over the last four years is the significant increase in the number of respondents who report seeing marine animals, an encouraging result given the surprisingly low figures recorded over the years ( $\chi^2=125.329$ ,  $p<0.05$ ) (Figure 11). There is no information to suggest why this rapid change has occurred, as Figure 12 shows that there has been no corresponding increase in sightings of key species.

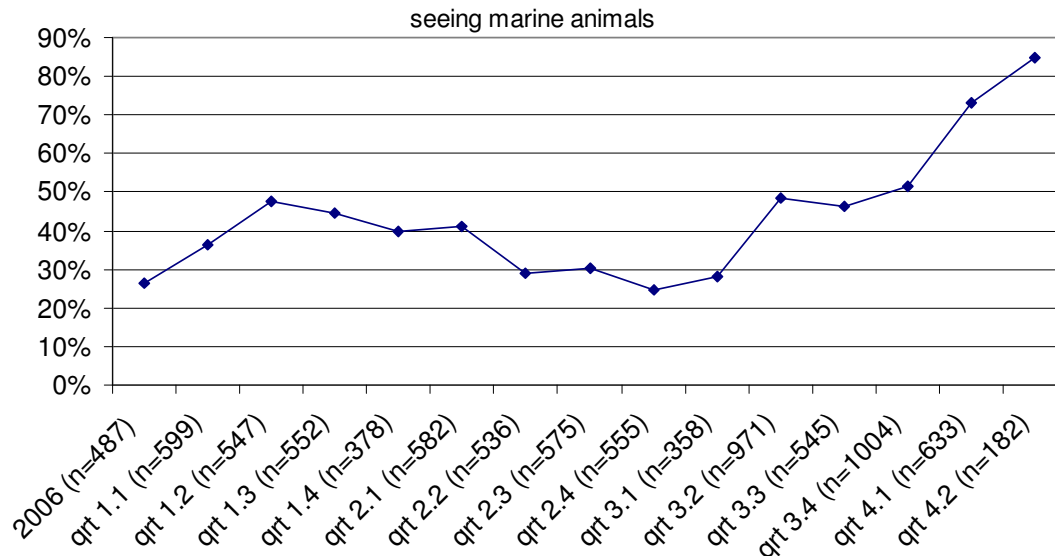


Figure 11. Percentage of respondents who reported seeing marine animals during their reef tour.

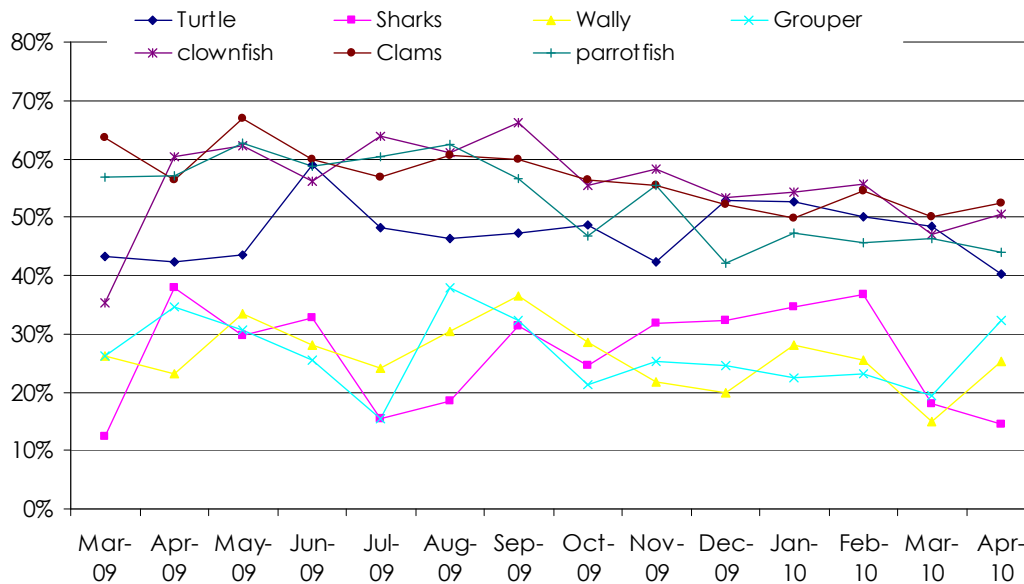


Figure 12. The frequency with which types of marine animals were seen by respondents over the last year of data collection.

Finally, satisfaction ratings, measured on a scale of 1 to 10, have declined somewhat in 2010 from previous years (Figure 13). Whilst this represents a significant decline ( $F= 4.717$ ,  $p<0.05$ ), this result is due to the sharp decline in the second quarter of 2010, based on 181 surveys, and thus may not represent a long-term trend.

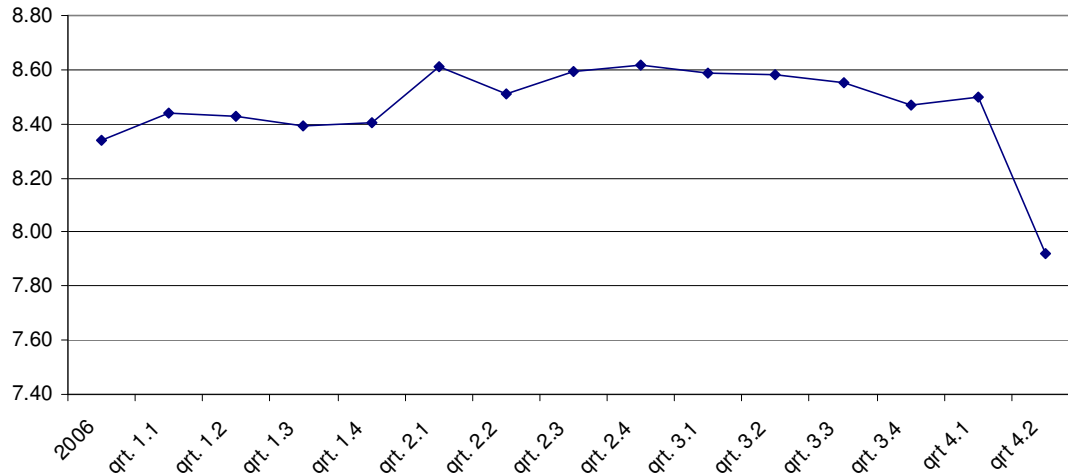


Figure 13. Changes in satisfaction between 2006 and 2010.

In keeping with the lower satisfaction scores, a slight drop in the percentage of respondents who felt that they had received value for money, or who would recommend the trip to others were also recorded in 2010 (Figure 14).

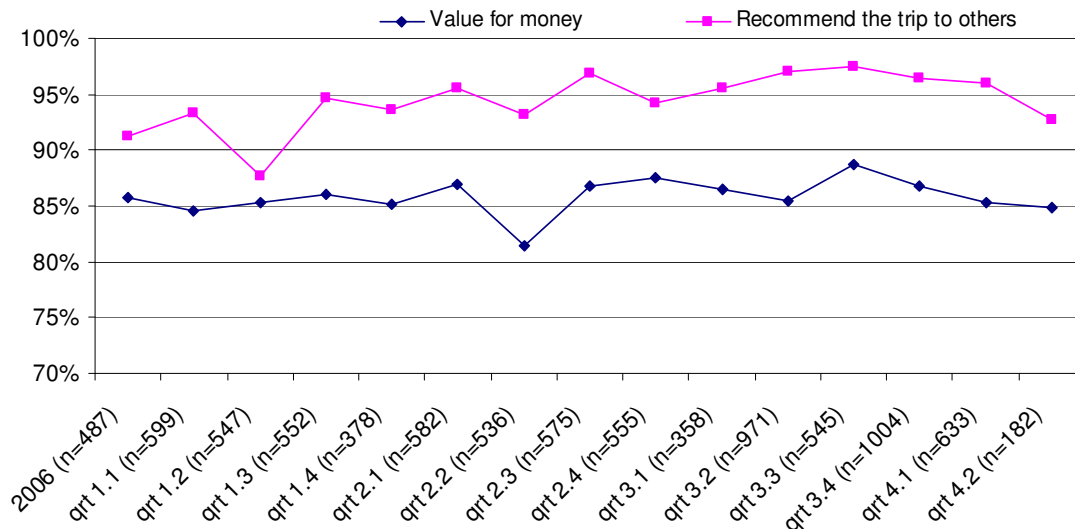


Figure 14. Changes in perceptions of value for money and recommendation rates between 2006 and 2010.

The changes in these latter variables, relating to satisfaction with the experience, are based on a smaller sample size and may not indicate a long term change. Indeed, Moscardo et al. (2003) reported that 73% of visitors would definitely recommend the reef trip to others and a

further 23% of respondents would probably recommend it to others. These results suggest that the variable “would you recommend the trip to others?” has remained relatively stable over the last 10 years.

Other variables do not appear to have changed much over the last four years and are similar to findings by Moscardo et al in 2003. For example, the percentage of respondents travelling with their spouse or partner shows very little fluctuation over the period of the survey, indicating the strength of this market to the Great Barrier Reef. Further, these results are consistent with the findings of Moscardo et al. (2003), who also found this market to be the largest in their surveys, representing 43% of their sample.

### 2.3 Trends in reef tourism – segmentation characteristics

Segmentation is a way of identifying sub-groups of consumers within a larger population. The aims of segmentation from a destination perspective are to understand the market, identify strategies for effectively communicating with that market and maximising the return on investment in marketing expenditure by maximising visitor numbers. Segmentation studies may be based on a range of factors although the most common are those based on specific demographic factors (including age, gender and profession) or psychological factors (motives).

A segmentation study of visitors to the GBR (Coghlan & Prideaux, 2012b) adopted a psychographic segmentation approach, with a subsequent analysis of socio-demographic, travel behaviour and experiential variables. To a large extent the segments developed from our data reflect those segments identified by Tourism Australia and Tourism Queensland in their marketing campaigns. The study confirmed the importance of visiting the reef to most segments and provided an idea of the size of the different markets. It also highlighted changes in segments over time, with an apparent increase in the number of *Experience Seekers*, demanding value for money, sophisticated and environmentally friendly products and services, good interpretation and a variety of attractions in a destination. The results suggest that we may be witnessing a move away from the ideological dichotomy between mass tourism and ecotourism and instead adopting a pragmatic approach to the use of the term ecotourism, and developing industry-wide practices that encourage environmental and social sustainability in the region.

Table 2: Characteristics of the segmentation study's two clusters

Cluster	Group	Characteristics
Cluster 1 (more motivated to see the Outback, go to beaches, visit islands, see wildlife, meet new people, experience aboriginal culture )	A	English-speaking, eco-aware, traveling with partner
	B	German/Scandinavian, younger/ backpacker, lower eco-awareness
	C	Australian, repeat visitors, visits to friends and relatives, lower eco-awareness
Cluster 2 (less motivated to see the Outback, go to beaches, visit islands, see wildlife, meet new people, experience aboriginal culture)	D	Intrastate repeat visitors, VRF
	E	Europeans, younger, backpackers
	F	N. Americans, retired, travelling in a tour group
	G	First time interstate visitors, younger, visits to friends and relatives

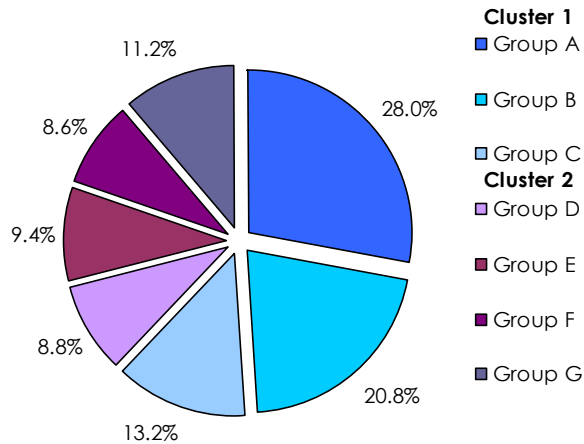


Figure 15. The size of the groups identified through the segmentation study's cluster analysis.

## 2.4 Trends in reef tourism – seasonality

In another report, the seasonality effects on GBR tourism were analysed (Coghlan & Prideaux, 2012c). The report identified opportunities for product diversification as the destination appealed to visitors with a greater level of flexibility during the low tourist season. These tend to be couples or visitors travelling with friends, and generally both younger and international first-time visitors, who may be looking to take advantage of lower prices in hotels and holiday apartments. Visitors may also take advantage of discounts and other specials offered during the low season.

Another interesting trend specific to reef tourism in this region is the effect of weather on reef activities and enjoyment. Poor weather was mentioned significantly more often in the low season and respondents were more likely to swim and snorkel during this period (the hotter months). During the windier winter months, respondents frequently complained that the water temperature and air temperature were too cold. These results have safety implications as the summer months coincide with both higher risks from marine stingers and lower staff numbers than in the peak season.

### 3. Reef tourism research in a wider context

From the outset, the reef visitor monitoring program was designed to allow for comparisons with data collected in MTSRF's project 4.9.2 (Airport survey and rainforest survey). The airport survey was designed to collect data on visitor activity in the Tropical North Queensland region including visitor attitudes and activities undertaken on the GBR and in the Wet Tropics rainforest. Questions concerning visitor socio-demographics, travel behaviour and satisfaction were consistent between the reef survey and the airport exit survey. Finally, the airport exit survey also provides an indication why some visitors to the region chose not to visit the reef. Readers are directed to the outputs of project 4.9.2 for further details from the airport and rainforest survey results. Reports are available from [www.rrrc.org.au](http://www.rrrc.org.au).

#### 3.1 Comparing socio-demographic characteristics and travel behaviour

It should be noted that the airport survey only investigated visitors in the Tropical North Queensland section of the Great Barrier Reef region but not Townsville, the Whitsunday region or Capricornia. The following discussion therefore refers only to visitors in the Tropical North Queensland section of the Great Barrier Reef region.

Some notable differences exist between respondents surveyed at the reef and at the rainforest. Figure 16 indicates that rainforest survey respondents were more likely to be domestic visitors and less likely to be from other major markets such as Europe, the UK and Ireland, and North America. A chi-squared test confirms that significant differences exist between the data sets ( $\chi^2=695.85$ ,  $p<0.05$ ,  $df=16$ )

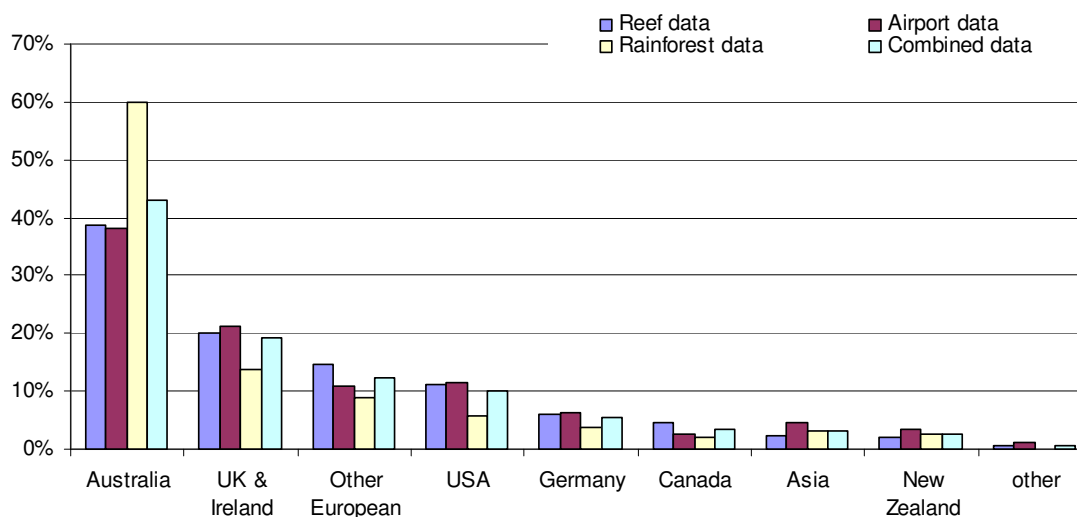


Figure 16: Comparison of country of origin between the three data sets.

Results also suggest that the reef appeals to a younger market; the 20–29 year old age bracket is larger in the reef data set than in either the data collected at the rainforest or the airport (Figure 17). This represents a significant difference in age composition ( $\chi^2=624.504$ ,  $p<0.05$ ,  $df=12$ ).



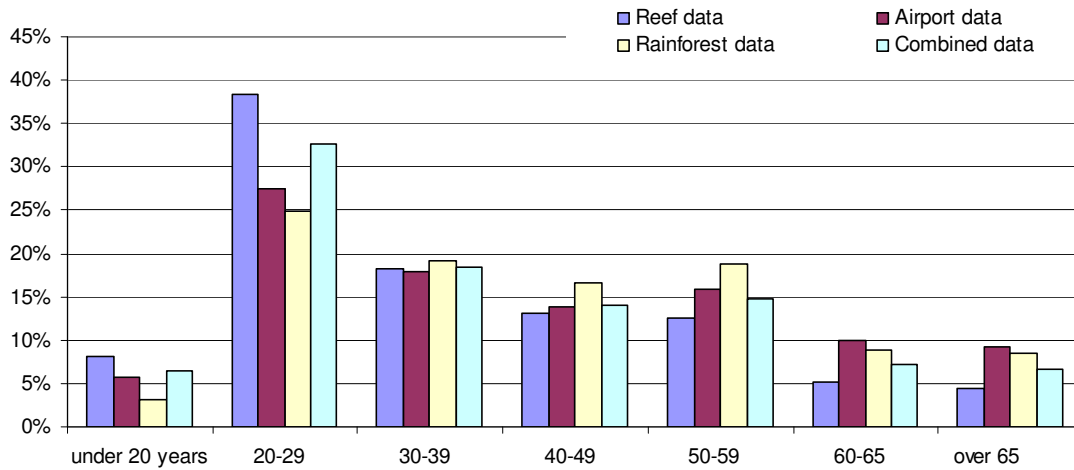


Figure 17: Comparison of respondents' age groups between the three data sets.

Another difference that exists between respondents at the reef, rainforest and airport is their occupation; the respondents at the reef were more likely to be students or professionals and less likely to be retired (Figure 18). This largely mirrors the results presented in Figure 15 and reveals more significant differences between respondents at the three sites ( $\chi^2=421.912$ ,  $p<0.05$ ,  $df=24$ ).

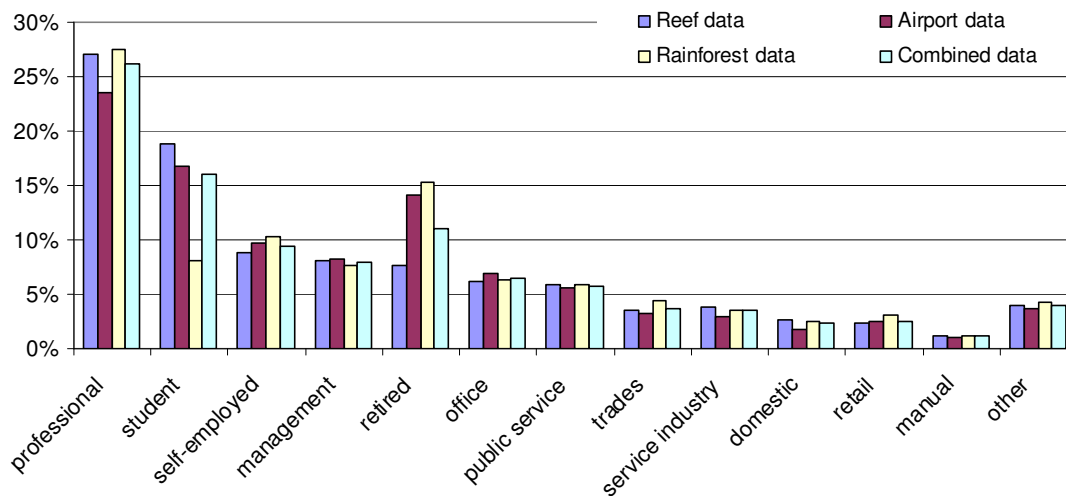


Figure 18: Comparison of respondents' occupations between the three data sets.

Additionally, when asked if this was their first visit to the region, reef visitors were less likely to be repeat visitors; 79.5% of reef visitors had not visited the region previously, while 67.3% of visitors at the airport and 64.6% of visitors at the rainforest were first-time visitors to the region. This also represents a significant difference ( $\chi^2=374.678$ ,  $p<0.05$ ,  $df=2$ ) between visitors surveyed at different sites.

Results also indicate that respondents at the airport were more likely to be staying in hotels and less likely to be staying at backpacker hostels, while respondents surveyed at the rainforest were more likely to be staying in resorts or caravan parks and/or camping (Figure 19). These represent significant differences in choices of accommodation between data sets ( $\chi^2=960.156$ ,  $p<0.05$ ,  $df=14$ ).

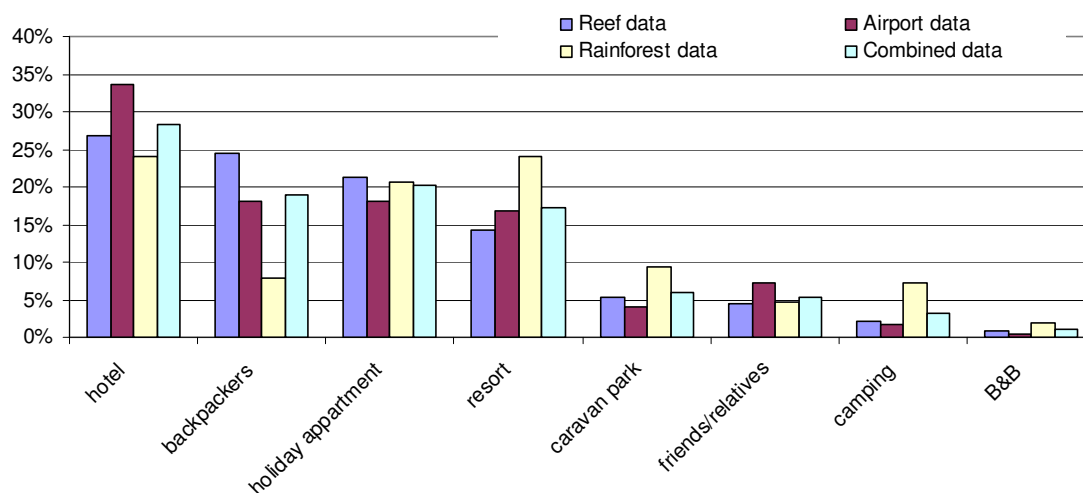


Figure 19: Comparison of respondents' choice of accommodation between the three data sets.

Significant differences were also noted in the choice of transport used by respondents at the three different sites ( $\chi^2=1167.736$ ,  $p<0.05$ ,  $df=12$ ). Respondents surveyed at the rainforest were more likely to be using a private or rental car, and less likely to arrive using a bus or coach or to fly into the region (Figure 20).

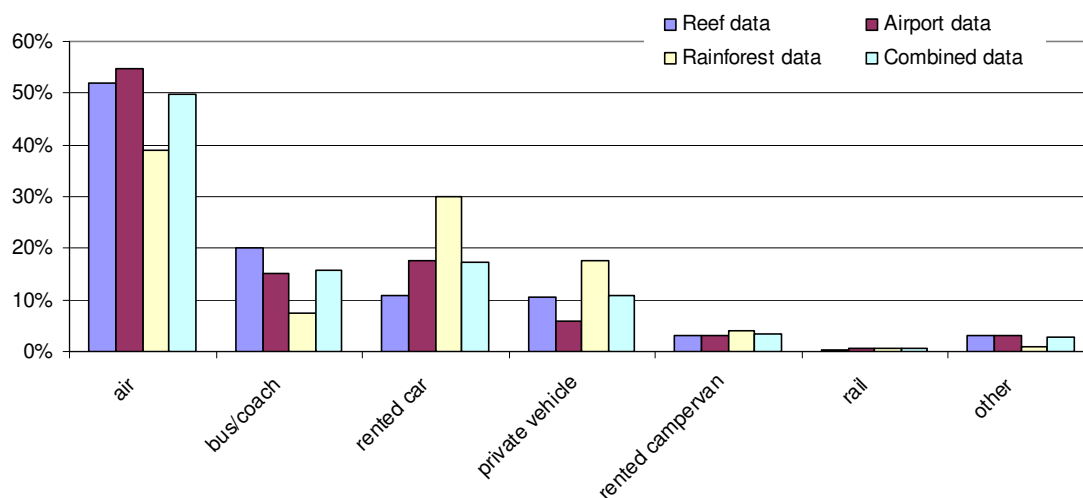
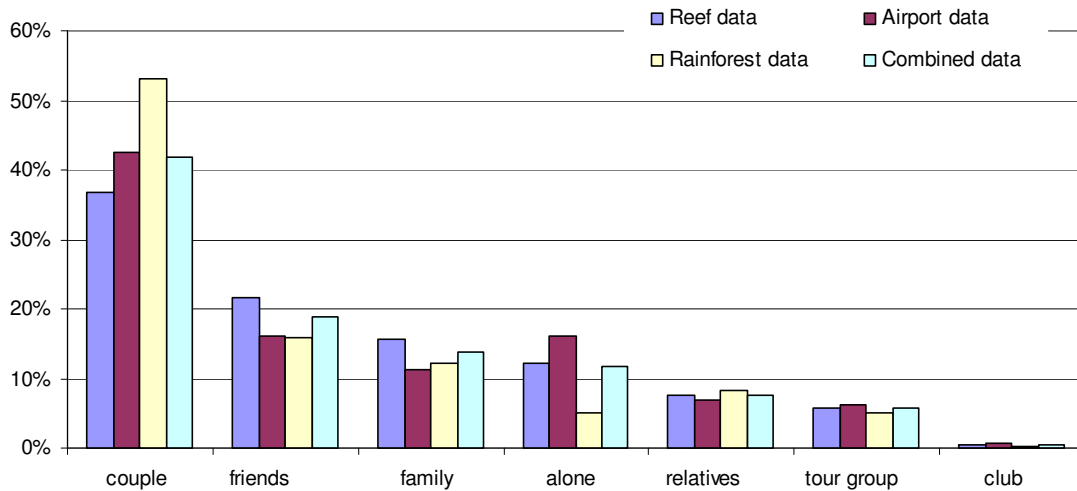


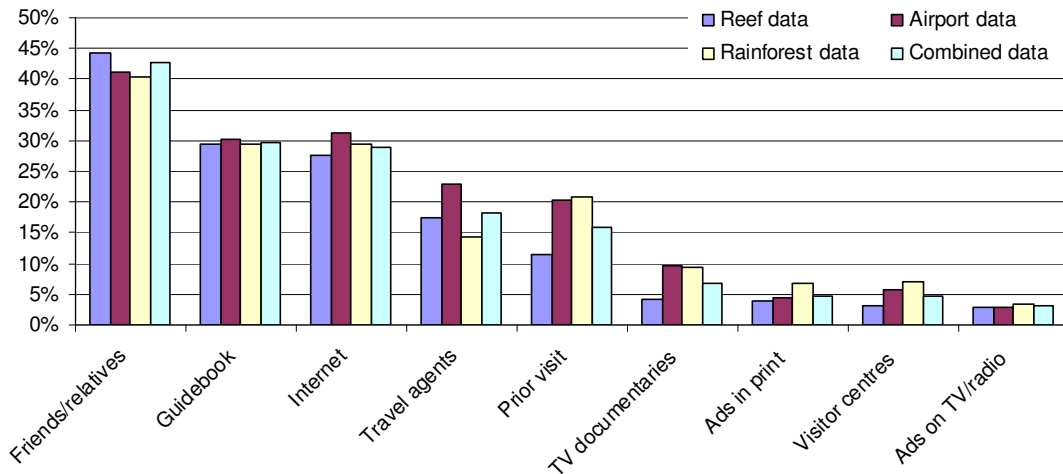
Figure 20: Comparison of respondents' choice of transport between the three data sets.

A number of significant differences ( $\chi^2=500.735$ ,  $p<0.05$ ,  $df=12$ ) were noted in the travel party composition of respondents at the airport, reef and rainforest (Figure 21). Visitors to the rainforest were more likely to be travelling with their spouse or partner, and less likely to be travelling alone, whilst the reef appears to appeal to visitors travelling with friends or family.



**Figure 21: Comparison of respondents' travel party composition between the three data sets.**

When asked what sources of information they used to find out about the region, there was relatively little (and no significant) difference between respondents, with the slight exception that respondents at the reef were less likely to use prior visits as a source of information (Figure 22).



**Figure 22: Comparison of respondents' sources of information about the region between the three data sets.**

Travel motivations also differed between the data sets. Not surprisingly, respondents at the reef rated the GBR and snorkelling and diving as higher motivating factors to visit the region whilst respondents at the rainforest rated the rainforest as more important (Figure 23). All significant differences are reported in Table 3.

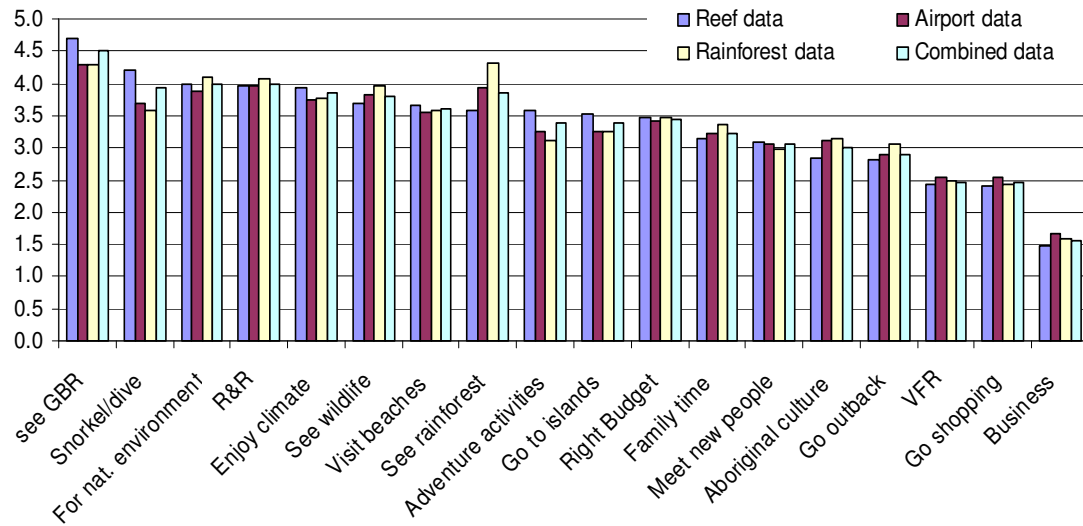


Figure 23: Comparison of respondents' travel motivations between the three data sets.

Table 3: ANOVA test for significance between the three data sets.

	df	F	Sig.
See the GBR	2	456.329	.000
See the rainforest	2	592.623	.000
See the wildlife	2	84.238	.000
Aboriginal culture	2	121.718	.000
Enjoy the climate	2	66.562	.000
For the natural environment	2	57.151	.000
R&R	2	15.400	.000
Snorkel/dive	2	466.459	.000
Family time	2	18.707	.000
Meet new people	2	12.029	.000
Visit friend and relatives	2	7.056	.001
Go Outback	2	38.166	.000
Visit the islands	2	107.062	.000
Adventure activities	2	218.722	.000

Business travel	2	51.741	.000
Go shopping	2	21.218	.000

Finally, there were no significant differences in the satisfaction scores of respondents surveyed at the reef (8.50), rainforest (8.45) or airport (8.51).

### 3.2 Previous reef experience and activities at the reef

The majority of visitors surveyed at the airport had visited the Great Barrier Reef during their stay in the region (74.6%). Those visitors who had been to the reef were asked if they had previously visited reefs in other locations. If they had, respondents were asked to list which reefs they had visited. Respondents were also asked to indicate the activities they had participated in during their visit to the GBR. The results indicated that more respondents surveyed at the reef were repeat visitors to the GBR (27.3% compared to 25.1% at the airport) and many more had been to other reefs previously (46.3% compared to 38.5%). Both of these results represent significant differences in visitation between the two data sets ( $\chi^2=7.058$ ,  $p<0.05$ ,  $df=1$  and  $\chi^2=54.357$ ,  $p<0.05$ ,  $df=1$ , respectively). The actual reefs visited by respondents were also different between respondents at the reef and the airport, only visits to the South Pacific were similar (Figure 24). Significantly more respondents from the airport data set had visited the Caribbean ( $\chi^2=4.912$ ,  $p<0.05$ ,  $df=1$ ), and Hawaii ( $\chi^2=14.334$ ,  $p<0.05$ ,  $df=1$ ), whilst more respondents from the reef data set had visited South East Asia ( $\chi^2=28.356$ ,  $p<0.05$ ), Micronesia ( $\chi^2=3.983$ ,  $p<0.05$ ), the Indian Ocean ( $\chi^2=6.441$ ,  $p<0.05$ ) and the Red Sea ( $\chi^2=6.519$ ,  $p<0.05$ ).

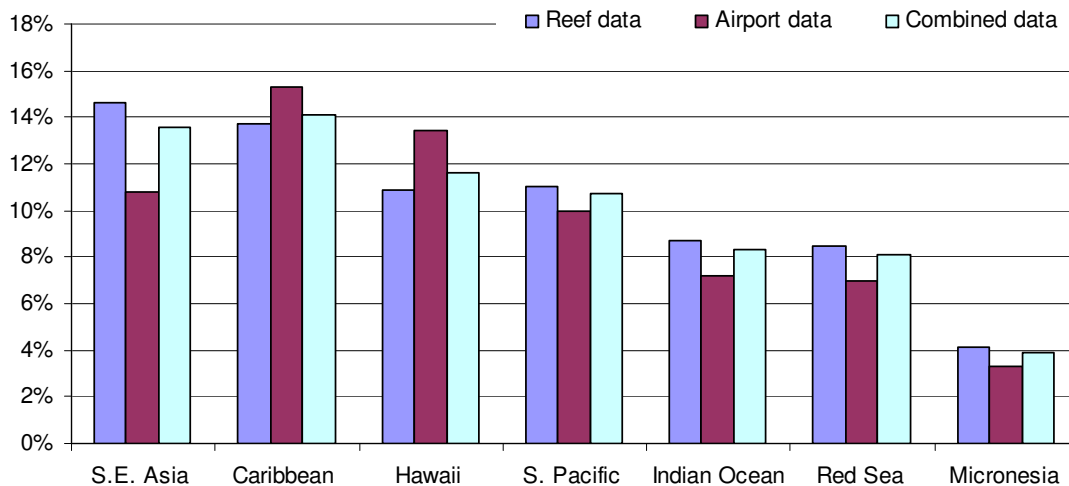


Figure 24: Comparison of reefs visited by respondents from the airport and the reef.

A comparison of reef activities indicates that respondents from the reef data set are more likely to have undertaken most activities, with the exception of helicopter tours and sailing. The percentage of certified divers was similar across the two data sets (Figure 25).

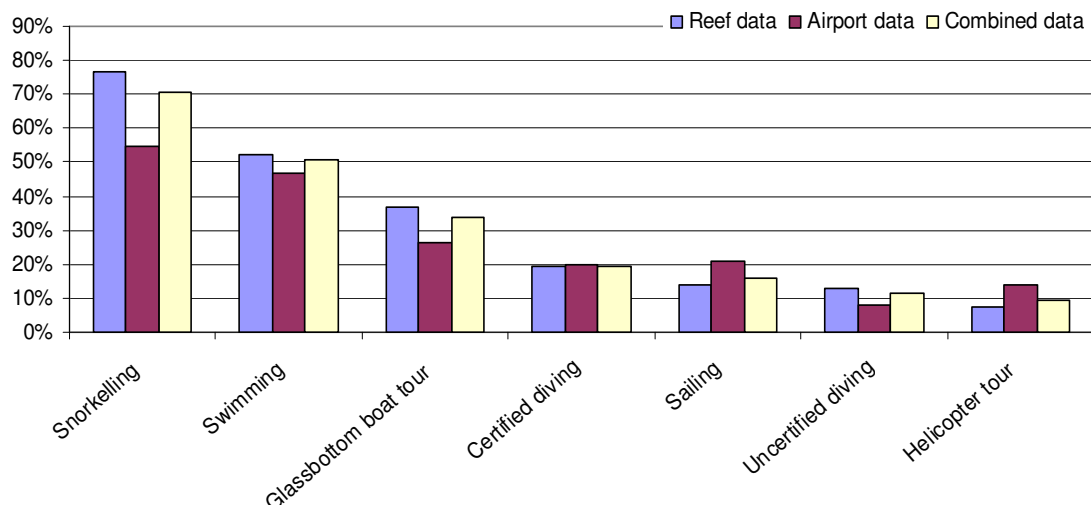


Figure 25: Comparison of activities undertaken at the reef by respondents from the airport and the reef data sets.

### 3.3 Reasons for not visiting the reef

Figure 26 outlines the key reasons for not visiting the reef provided by respondents from the airport data set. The most common response was 'not enough time' (42.8%) followed by 'have already been' (30.4%). The cost of going to the reef was also a concern for one in six respondents who chose not to visit the GBR during their stay in the region. It was most often international respondents who indicated not having enough money as a reason for not visiting the GBR, with 20.4% of international respondents giving cost as a barrier compared to 13.4% of domestic visitors. This represented the only significant difference ( $\chi^2=7.751$ ,  $p<0.05$ ,  $df=1$ ) between international and domestic respondents.

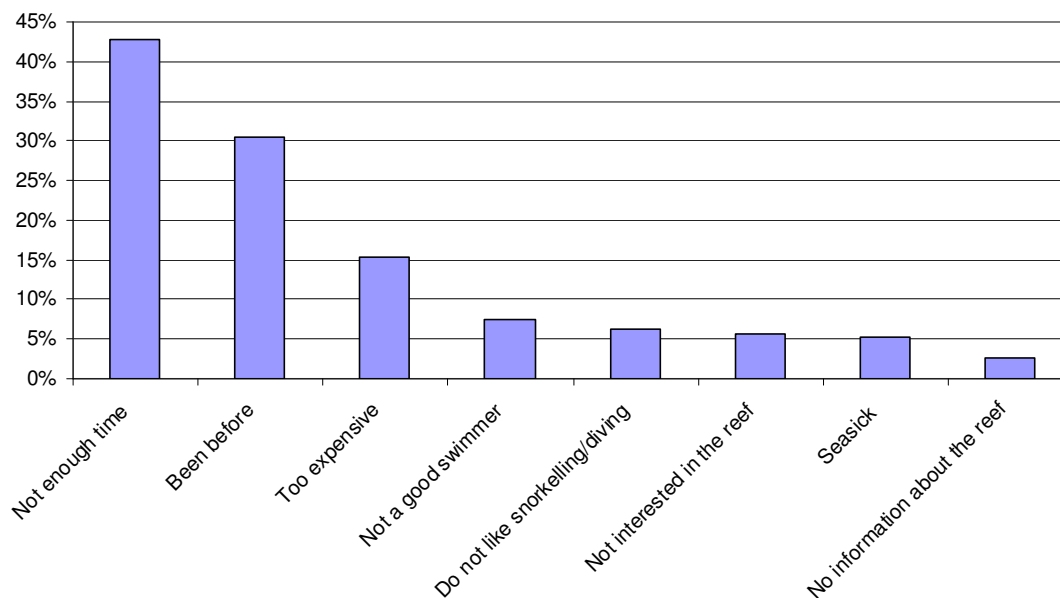


Figure 26: Reasons given by respondents at the airport for not visiting the GBR.

## 4. Research outcomes

At the outset of Project 4.8.6 (Analysis of tourism use and impact on the Great Barrier Reef for managing sustainable tourism) a number of objectives were identified after an exhaustive literature review and extensive consultations with stakeholders. The objectives were to identify:

- the socio-demographic characteristics and motivations of visitors
- travel patterns in different regions of the GBR
- activity patterns on the reef
- alternative destinations considered
- previous reef tourism experience
- comparison of the GBR with other reef tourism destinations (both national and international)
- expectations of the reef and reef trip
- satisfaction levels with the reef experience, including an analysis of critical incidents on the reef that shape satisfaction levels.

The results of the research have added to our understanding of tourism on the Great Barrier Reef in the following ways:

1. Refined existing segmentation systems and identified patterns of visitation based on socio-demographics, motivations and activities.
2. Identified and analysed alternative destinations considered by respondents.
3. Measured satisfaction with reef experiences by increasing our understanding of reef expectations and comparisons with previous experience of the Great Barrier Reef, other Australian reefs and international reef tourism destinations.
4. Identified internal and external factors driving trends in visitation patterns.

A number of reports have detected changes in key market characteristics and variables concerning reef perceptions and satisfaction, as well as investigating specific aspects of reef tourism. Readers are directed to the quarterly 'tourism barometers' and annual reports which may be downloaded through RRRC's website ([www.rrrc.org.au](http://www.rrrc.org.au)) or sent directly to stakeholders.

Other reports based on this research include technical reports on market segmentation (Coghlan & Prideaux, 2012b), reef tourism seasonality (Coghlan & Prideaux, 2012c), and GBR reef tourism competitiveness (Coghlan & Prideaux, 2009b). These reports were designed to address the planning and marketing interests of tourism operators and destination marketing organisations such as Tourism Tropical North Queensland, Tourism Port Douglas and Daintree and Tourism Whitsundays. Key findings from the reports are available in the Third Annual Report (Coghlan & Prideaux, 2012a), as well as additional results on ecotourism accreditation, interpretation and key marine species/attractions.

### 4.1 Knowledge gaps

A number of knowledge gaps were identified during the course of this research. In the past, there has been limited understanding of end-user research needs and the manner in which stakeholders apply research findings. The research team involved in this project has tried to address this issue. However, it is apparent that some end-users remain unaware of their research needs and have yet to develop internal organisational frameworks to apply

research findings. In addition, we have limited understanding of the knowledge transfer process between researchers and end-users, with little or no information on the download of outputs listed on [www.rrrc.org.au](http://www.rrrc.org.au), and no inbuilt feedback mechanism within the project to determine how outputs have been used.

Stakeholders have identified further information on the barriers to visitation and repeat visitation as an area of key interest to them. Travel behaviour at the destination is an emerging area of interest as visitors to the region increasingly book their activities onsite instead of pre-planning their holidays in advance. This may have future implications for crowding at the reef, as visitors wait for optimal conditions during their stay before visiting.

Little research has been carried out on the emerging markets of China and India to understand how tourists from these countries perceive and use the nature-based tourism attractions that are central to this destination's tourism industry.

Finally, greater integration of this project could occur with concurrent projects and existing data on reef visitation, e.g. the GBRMPA's Environmental Management Charge, industry information on snorkellers, certified and resort divers from indemnity forms, and so forth.

## **4.2 Future research**

During the course of this research a number of new issues were identified as requiring further research. These are listed below. However, before dealing with new research needs, the creation of baseline data and annual monitoring provides a powerful tool for identifying changes in aspects of reef tourism that may be missed by the *ad hoc* approach characteristic of previous tourism research on the GBR. The success of this project highlights the need for a long-term monitoring project designed to provide timely advice to management authorities and the tourism industry on changes that are occurring in tourism demand for the GBR.

Future research issues that require research include:

- The impact of climate change on both the demand and supply sides of reef tourism
- Changes in visitor segments
- The effectiveness of environmental education on reef visitors
- Continued monitoring of individual visitor segments
- The role of mega fauna in stimulating tourism demand
- The need to develop a new suite of themed reef experiences to improve the repeat visitation rate (these might include island, inner reef and outer reef locations that are packaged and marketed as differentiated experiences)
- Investigation into the decline in the scuba diving industry, particularly the dive training sector
- An analysis of how the reef has changed in the last three decades using oral histories. This will assist in identifying the impacts of long-term trends such as the decline in the attractiveness of the cod hole over the last three decades (the number of cod has declined from about 20 in the 1970s to as few as three in 2010).

Little scientific research has been undertaken into aspects of the interface between the marine tour operator and the location where tourism activities take place. For example, there is a large knowledge gap about the effects of fish feeding on both fish and the immediate ecosystem, the disposal of waste water and the impact of sunscreen on water quality.



## **5. Conclusion**

The GBR is a significant tourism resource for numerous tourism dependent communities in coastal Queensland. It is apparent that ongoing monitoring of tourism is required to ensure that the region's tourism industry is able to continue to deliver top quality visitor experiences. This project has demonstrated the feasibility of delivering timely and tailored research to end-users. It has also demonstrated the potential for developing a greater understanding of the push and pull factors that lie at the heart of the region's tourism industry. It is hoped that further long-term monitoring of the type reported in this publication will be supported in the future.

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## APPENDIX A: The survey

DATE: \_\_\_\_\_ (day/month/year)

Q1. Are you: ☐ Male ☐ Female

Q2. Where do you usually live? Australia (postcode) \_\_\_\_\_ Overseas (country) \_\_\_\_\_

Q3. Please indicate your age group:

☐ Under 20 yrs ☐ 20 to 29 ☐ 30 to 39 ☐ 40 to 49 ☐ 50 to 59 ☐ 60 to 69 ☐ Over 69 yrs

Q4. How would you best describe your occupation? (Please choose only one)

☐ Self-employed ☐ Professional ☐ Domestic duties ☐ Office/Clerical ☐ Manual/Factory worker ☐ Retail ☐ Student

☐ Public Service ☐ Management ☐ Tradesperson ☐ Service Industry ☐ Retired / Semi-retired ☐ Other: \_\_\_\_\_

Q5. Which of these best describe your immediate travel party:

☐ Alone ☐ Couple (partner/spouse) ☐ Tour group ☐ Club ☐ Friends ☐ Family with children ☐ Relatives

Q6. Is this your first visit to Townsville? ☐ Yes ☐ No. If No, how many times have you visited Townsville? \_\_\_\_\_

Q7. How many nights do you intend spending in Townsville? \_\_\_\_\_ Nights

Q8. What is your main type of accommodation during your visit to Townsville?

☐ Hotel/motel ☐ Backpackers hostel ☐ Holiday apartment/unit ☐ Bed & breakfast

☐ Camping ☐ Caravan park/cabin ☐ Friends/relatives ☐ Resort

Q9. What is your main type of transportation to Townsville?

☐ Air ☐ Bus/coach ☐ Private vehicle ☐ Rented campervan/caravan

☐ Rail ☐ Rented car ☐ Other: \_\_\_\_\_

Q10. Where did you find out about Townsville? (Select all that apply)

☐ Internet ☐ Tourist guide books ☐ Friends/family ☐ Advertisements in print ☐ Advertisements on TV/radio

☐ Travel Agent ☐ Visitor centres ☐ Been before ☐ TV documentary ☐ Other (please specify): \_\_\_\_\_

Q11. Please tell us where you spent your last holiday: \_\_\_\_\_

Q12. Please list up to 3 other destinations you considered while planning your current holiday:

(1) \_\_\_\_\_ (2) \_\_\_\_\_ (3) \_\_\_\_\_

Q13. Please indicate how important each of the features was in your decision to visit Townsville:

	Not at all Important	Unimportant	Neutral	Important	Very Important
Visit the Great Barrier Reef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visit the rainforest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
See Australian Wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experience Aboriginal culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enjoy the climate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price matched my budget	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experience the natural environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rest & relax	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snorkelling & diving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spend time with my family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not at all Important	Unimportant	Neutral	Important	Very Important
Meet new people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visit the beaches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taste tropical fruits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visiting friends & relatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experience the outback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Go shopping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visit the islands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adventure activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business/conference/meeting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Try reef seafood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To go sailing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14. Please explain why you chose this reef operator today (pick as many as apply)

<input type="radio"/> Appealing advertisements	<input type="radio"/> Eco-certification	<input type="radio"/> Recommended by agent/hotel/hostel	<input type="radio"/> Price
<input type="radio"/> Availability/suited my schedule	<input type="radio"/> Word of Mouth	<input type="radio"/> Appealing destination and/or activities	<input type="radio"/> Package

Q15. When choosing your trip, did you notice if your reef operator is eco-certified? ☐ Yes ☐ No

Q16. Is this your first visit to the Reef? ☐ Yes ☐ No If No, how many times have you visited the Reef? \_\_\_\_\_

Q17. Are you here to dive the Reef? ☐ No ☐ Yes If Yes, how many dives have you completed before this trip? \_\_\_\_\_

Q18. Have you visited any of the following reefs? ☐ No ☐ Yes

<input type="radio"/> Caribbean	<input type="radio"/> Hawaii	<input type="radio"/> Indian Ocean	<input type="radio"/> South Pacific
<input type="radio"/> South East Asia	<input type="radio"/> Micronesia	<input type="radio"/> Red Sea	<input type="radio"/> Other Aust reefs (Ningaloo)

Q19. How do the other reefs that you have visited compare with the Great Barrier Reef?

	Better	Same	Worse		Better	Same	Worse
South East Asia is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Red Sea is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
South Pacific is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hawaii is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indian Ocean is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Micronesia is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caribbean is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ningaloo is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q20. What activities have you participated in today?

<input type="radio"/> Swimming	<input type="radio"/> Helicopter flight	<input type="radio"/> Certified scuba diving	<input type="radio"/> Resort/uncertified scuba diving
<input type="radio"/> Snorkelling	<input type="radio"/> Visiting the islands	<input type="radio"/> Overnight cruise	<input type="radio"/> Glass bottom boat/semi-sub coral viewing
<input type="radio"/> Sailing	<input type="radio"/> Marine biologist tour	<input type="radio"/> Diver training course	<input type="radio"/> Marine biology presentation
<input type="radio"/> Viewing marine animals If yes, which animals did you see?			
<input type="radio"/> Maori Wrasse	<input type="radio"/> Soft corals	<input type="radio"/> Trevally	<input type="radio"/> Seacucumbers
<input type="radio"/> Reef sharks	<input type="radio"/> Clown fish	<input type="radio"/> Jellyfish	<input type="radio"/> Giant Clam
<input type="radio"/> Triggerfish	<input type="radio"/> Damselfish	<input type="radio"/> Rabbitfish	<input type="radio"/> Angelfish
<input type="radio"/> Hard corals	<input type="radio"/> Turtles	<input type="radio"/> Seastars	<input type="radio"/> Anemones
			<input type="radio"/> Barracuda
			<input type="radio"/> Wrasse

Q21. Where did you get your information about the reef?

<input type="radio"/> A marine biology talk on board	<input type="radio"/> Videos on board the boat	<input type="radio"/> Guided snorkel tour	<input type="radio"/> The Web
<input type="radio"/> Dive master/instructor briefing	<input type="radio"/> Books/brochures on board	<input type="radio"/> Glass bottom boat/semi-sub tour	
<input type="radio"/> Films, TV documentaries	<input type="radio"/> Other magazine articles/books	<input type="radio"/> I didn't get any information about the reef	
<input type="radio"/> Other (please specify) _____			

Q22. To what extent has your trip increased your knowledge about the reef? ☐ Not at all ☐ Somewhat ☐ Greatly increased

Q23. What was the most important/memorable piece of information that you learnt at the reef today? \_\_\_\_\_

Q24. Did any of the information you received today change your appreciation of the reef? ☐ No ☐ Yes  
your behaviour on the reef? ☐ No ☐ Yes

Q25. Would you like more information on any of the following? ☐ No ☐ Yes

<input type="radio"/> Snorkelling and diving on the reef	<input type="radio"/> Research on the GBR	<input type="radio"/> Reef species diversity and biology
<input type="radio"/> Conservation and/or threats to the reef	<input type="radio"/> History of the reef	<input type="radio"/> Human use of the reef/benefits derived from the reef

Q26. On a scale of 1 (not at all satisfactory) to 10 (highly satisfactory) how would you rate your reef trip?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

Q27. What factors influenced your satisfaction rating? \_\_\_\_\_

Q28. What were the best features of the experience for you? \_\_\_\_\_

Q29. What were the worst features of the experience for you? \_\_\_\_\_

Q30. To what extent did the reef that you saw today meet your pretrip expectations?

☐ Not at all ☐ Not very ☐ Somewhat ☐ Very much

Q31. To what extent did the experience that you had today meet your pretrip expectations?

☐ Not at all ☐ Not very ☐ Somewhat ☐ Very much

Q32. Taking into account all the different elements of your trip today (comfort of the boat, quality and diversity of the reef, activities and interpretation available, professionalism of the crew, etc.), do you feel that you got value for your money?

☐ Yes ☐ Unsure ☐ No, if No, please explain: \_\_\_\_\_

Q33. Would you recommend visiting the Great Barrier Reef to prospective visitors?

☐ No ☐ Yes ☐ Unsure ☐ Not to everybody: \_\_\_\_\_