

Assessment of tourism activity in the Great Barrier Reef Marine Park Region

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Executive Summary

This report contains an assessment of current tourism activity and expenditure trends in the Great Barrier Reef Marine Park (GBRMP, mainland and adjacent islands combined) region. Estimates of tourism generated employment are also provided as well as a brief summary of investment.

Also included are twenty year forecasts for tourism activity and expenditure in the region. These forecasts assume the new zoning regime is implemented, with no decline to environmental amenity values, thus securing visitation growth to region.

In the year ending June 2003 there were 9.3 million visitors to the GBRMP region. Of these there were 4.0 million domestic overnight visitors, 4.4 million domestic day visitors and 845 000 international visitors. It is estimated these visitors spent a total of \$4.1 billion while in the GBRMP region. The number of international visitors to regions located within the GBRMP tourism area remained relatively static over the 1999/00 – 2001/02 period before experiencing a 5 per cent decline in 2002/03. This decline in the number of visitors in 2002/03 also resulted in a fall in visitor nights. Tourism employment was estimated at 33 100 persons in the region in 2002/03, based on that year's estimate for tourism earnings.

Over the next 20 years to 2022/23, cumulative tourism expenditure in the GBRMP region is forecast at \$62.2 billion, based on a discount rate of 5 per cent, based on an average annual growth for international travel to the region of 4-5 per cent, 0.7-0.9 per cent growth for domestic overnight visitors and 0.5 per cent in domestic day trippers. Other important variables used in this analysis for international and domestic travel to the region, average night/day spend and the average length of stay are assumed to remain constant at levels estimated for 2002/03.

It is likely that the GBRMP region will become more reliant on the international travel sector for tourism earnings. The share of total expenditure in the region sourced from the international sector is expected to increase from just under 28 per cent to 46 per cent in 2022/23. However, over the 2003/04 to 2022/23 period, expenditure sourced from domestic travellers is estimated at \$39.5 billion or around 64 per cent of cumulative tourism expenditure (discounted at 5 per cent).

Sensitivity analysis of the forecasts suggests that changes to the risk attached to future earnings (the discount rate) has a strong influence on the expected tourism expenditure in the GBRMP region over the next 20 years. For example, a 20 per cent decline in visitor growth (for all sectors), that is a net loss of around 4.5 million visitors, will result in a decline in cumulative tourism expenditure in the region of around \$2.1 billion, assuming future real earnings are discounted at 5 per cent per year. In contrast, by reducing the discount rate from 5 to 3 per cent, increases the future income stream by \$13.0 billion. This suggests, as a rough rule of thumb, a one per cent reduction in the perceived risk to the income stream is equivalent to the total increase in real tourism expenditure over the next 20 years.

1 Introduction

The Bureau of Tourism Research (BTR) was commissioned by the Great Barrier Reef Marine Protection Authority (GBRMPA) to conduct a study assessing tourism activity in the Great Barrier Reef Marine Park (GBRMP) region and the benefits and costs for tourism of the draft zoning plan (DZP) proposed by the GBRMPA.

This report is the compendium of two reports already provided to GBRMPA. On 6 November 2003, a preliminary report was presented to GBRMPA on the current status and short term historic trends for visitor activity and expenditure in the GBRMP (combined mainland and island) region. On 10 November 2003, draft forecasts and a sensitivity analysis for the region were provided to GBRMPA for briefing purposes.

This report combines the two previous reports, together with two additional sections related to employment and investment, the inclusion of minor amendments to the GBRMPA domestic overnight forecasts and sensitivity tables for each tourism region adjacent to the GBRMP.

This report initially provides information on historical and current tourism activity in terms of visitor numbers, visitor nights by tourists who visited the GBRMP region in the years 1999/00 to 2002/03 and visitor expenditure. This information is sourced from the BTR's International Visitor Survey (IVS) and National Visitor Survey (NVS). The IVS is the major source of information on the characteristics and travel patterns of international visitors to Australia. The survey covers travellers to Australia over the age of 15 years and is conducted throughout the year at major international airports. The NVS is designed to provide a profile of the Australian traveller, both within Australia and overseas. Data are collected from Australians aged over 15 years, on location of travel, reasons for travel, transport and accommodation used, activities engaged in and travel expenditure.

A short summary of tourism employment and investment is covered in the report, including the likely future impact of the Qantas decision to use Cairns Airport as an entry point for its lower cost operator, Australian Airlines.

The final section of the report contains 10 and 20 year forecasts for international, domestic day and overnight travel to the GBRMP region, as well as a sensitivity analysis based on changes to visitation growth and discount rates.

The new zoning regime

The re-zoning of the GBRMP has generated a high level of public interest, as reflected by the large number of public submissions at various stages of its development. Overall the changes aim to better protect the range of biodiversity in the GBRMP, but at the same time be sensitive to the potential impacts re-zoning may bring for various industries and other stakeholders (including tourism).

In broad terms, Hand (2003, 8) describes the planning task as 'the formation of zoning arrangements that meet the **biodiversity** objectives while **complementing human uses** and values including minimising the impact on **existing users**'. The revised zoning proposal has:

- increased protection of the 70 identified bioregions (30 reef and 40 non-reef) with a minimum of at least 20 per cent per bioregion
- expanded the total area of the marine park zoned as 'no-take' areas (or highly protected 'Green' zones) from 4.6 per cent to around 33 per cent.
- introduced a single amalgamated zoning regime; and
- provided zoning for 28 coastal areas, totalling 4 830km², that became part of the Marine park between 2 August 2000 and 4 July 2001.

The new zoning plan will lead to changes to access and use for hundreds of the GBRMP reefs and islands. Overall, the tourism sector appears a net winner from the process, leading to increases in protected access points for various marine activities, such as diving, snorkelling and reef boating/cruises while reducing potential impacts on the coral and fishing stock that attract growth in tourism to the region.

The Plan provides considerable improvements to the protection of high value tourism destinations. In the Cairns and Far Northern Regions the revised zoning plan will increase protection of key tourism locations in the Agincourt and Ribbon Reefs and reefs offshore from Cairns, restricting extractive uses in many of these areas. There has also been an increase in buffer zones to preserve the future of the game fishing industry in this region and other regions to the south. The Townsville region has increased protected status at tourism locations such as around the Yongala shipwreck, Helix Reef and Myrmidon Reef. In the Whitsunday region green zones have increased in and around the Whitsunday Island group and at Bait and Hardy reefs, providing protection of high use tourism sites. Further south, protection has also increased at Brampton, Carlisle, Great Keppel, Heron, Wilson and Elliot Islands.

Reef wide there has been substantial consideration of the important charter fishing industry and the plan has sought where possible to exclude areas of importance to this sector of the tourism industry. Along the coastline improvements in protection for various habitats will assist in the growth of the recreational fishing tourism sector.

Scope of the study

Great Barrier Reef Marine Park region

It is assumed that tourism activity in regions around the GBRMP would provide a good indication of the tourism activity due to the Great Barrier Reef. Usually people who visit these regions go to see the Great Barrier Reef and conduct reef based activities.

For purposes of this study these regions have been defined to cover the following six tourism regions as redefined by BTR: Bundaberg, Fitzroy, Mackay, Whitsundays, Northern and Tropical North Queensland. Statistical Local Areas (SLAs) which are far away from the Great Barrier

Reef Marine Park in terms of travel time and distance have been excluded from the six tourism regions. A map showing the proposed boundary of the GBRMP region is at attachment A. The tourism regions mentioned above include surrounding islands.

Although tourism activity to the GBRMP islands is recorded in the six neighbouring regions, BTR has the capacity to report on tourism activity specifically to the GBRMP islands, and this report includes the islands specific information.

Information in the report and assumptions

This report provides information on tourism activity in the regions specified above. Tourism activity indicators include visitor numbers and visitor nights for international and domestic visitation during the year ending June 2003. Visitors to these regions are further grouped according to activity undertaken (eg. Go to the beach which includes swimming, surfing and diving, Go whale/dolphin watching in the ocean, Go fishing, Scuba diving). Note that the activities may not have taken place in the GBRMP region. The report also includes a break up of numbers based on purpose of trip.

Published regional expenditure estimates for both international and domestic visitors are provided. The most up to date regional expenditure estimates relate to the year 2000 for domestic tourism and 1999 for international tourism. Estimates have been adjusted using an extrapolation method to convert figures into current values.

Trends of the broad tourism indicators are provided at the regional levels specified above (where possible), for the period 1999/00 – 2002/03.

This study also contains forecasts for visitor, visitor nights and expenditure for the combined mainland/island regions adjacent to the Great Barrier Reef Marine Park for the years 2012/13 and 2022/23. Expenditure forecasts are based on the latest available estimates from BTR's regional expenditure publications. A discount rate of 5 per cent per annum has been used to calculate the real long term expenditure of the tourism industry.

2 Current tourism activity in the GBRMP tourism region

Domestic overnight travel

There were an estimated 16.6 million domestic overnight visitors to Queensland during the year ending June 2003 with these visitors staying a total of 79.6 million nights in Queensland. Of the total domestic overnight visitors to Queensland:

- 24 per cent visited the GBRMP tourism region (Table 1); and;
- 24 per cent of their visitor nights were spent in the GBRMP tourism region.

Table 1 Tourism activity by GBRMP tourism region ^a

	1999/00	2000/01	2001/02	2002/03
Overnight visitors ('000)				
Bundaberg	519	633	474	576
Fitzroy	854	859	872	965
Mackay	526	530	608	568
Whitsundays	449	386	384	436
Northern	882	925	819	906
Tropical North Queensland	1 267	1 381	1 347	1 298
Total GBRMP ^b	3 837	4 149	3 842	4 000
<i>GBRMP islands ^c</i>	294	206	241	283
Queensland	16 096	15 885	16 240	16 580
Visitor nights ('000)				
Bundaberg	1 972	2 134	1 855	2 030
Fitzroy	2 838	3 399	2 456	2 963
Mackay	1 950	2 075	1 941	1 848
Whitsundays	2 291	1 709	1 927	2 136
Northern	3 836	4 180	3 150	2 840
Tropical North Queensland	7 604	7 578	6 701	7 180
Total GBRMP ^b	20 491	21 073	18 030	18 997
<i>GBRMP islands ^c</i>	1 672	1 265	994	1 270
Queensland	75 897	73 629	74 408	79 551
Average nights				
Bundaberg	3.8	3.4	3.9	3.5
Fitzroy	3.3	4.0	2.8	3.1
Mackay	3.7	3.9	3.2	3.3
Whitsundays	5.1	4.4	5.0	4.9
Northern	4.3	4.5	3.8	3.1
Tropical North Queensland	6.0	5.5	5.0	5.5
Total GBRMP ^b	5.3	5.1	4.7	4.7
<i>GBRMP islands ^c</i>	5.7	6.1	4.1	4.5
Queensland	4.7	4.6	4.6	4.8

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. The total includes the mainland Statistical Local Areas and islands within the defined GRMPA tourism area. Note that the sum of categories may add to more than the total as some visitors may have visited more than one region on their trip.

c. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism regions.

The main tourism regions visited by the 4.0 million overnight visitors to the GBRMP region were Tropical North Queensland, Fitzroy and Northern. These three regions also had the highest proportion of the 19.0 million visitor nights spent in the GBRMP tourism area during the year ending June 2003. The proportion of visitors and visitor nights for these regions were:

Tropical North Queensland (32 per cent of visitors and 38 per cent of visitor nights);

- Fitzroy (24 per cent of visitors and 16 per cent of visitor nights); and

- Northern (23 per cent of visitors and 15 per cent of visitor nights).

Seven per cent of the visitors who travelled to the GBRMP region visited the islands located within the GBRMP area and about 2 per cent of the visitor nights were spent by visitors who went to these islands.

Purpose of domestic overnight travel to the GBRMP tourism area and activities undertaken

The purpose of travel and activities undertaken by domestic overnight visitors varied considerably across the regions that are located within the GBRMP tourism area. For example 91 per cent of visitors who stayed on an island within the GBRMP reported they travelled to the region for holiday or leisure purposes, compared to only 28 per cent of visitors who stayed in the Mackay region (Table 2).

Table 2 Purpose of travel and origin of visitor, domestic overnight travellers to the GBRMP tourism regions^a, 2002/03

	Overnight visitors ('000)	Purpose of visit ^b			Origin	
		Holiday or leisure	Visiting friends and relatives	Business	Interstate	Intrastate
			%		%	
Bundaberg	576	49	33	9	17	83
Fitzroy	965	41	31	17	15	85
Mackay	568	28	35	25	20	80
Whitsundays	436	66	16	14	41	59
Northern	906	33	28	34	19	81
Tropical North Queensland	1298	50	21	25	37	63
Total GBRMP^c	4 000	43	30	22	22	78
<i>GBRMP islands^d</i>	283	91	3	3	50	50
Queensland	16 580	24	22	20	33	67
Australia	75 216	42	36	20	31	69

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. Visitors may report more than one purpose of visit.

c. Includes the mainland regions and islands within the defined GRMPA tourism area.

d. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism regions.

It is important to note that not all domestic travel to the GBRMP tourism area was for the purpose of a holiday or to experience the attractions of the GBRMP. For the year ending June 2003:

- 43 per cent of visitors travelled to the GBRMP tourism area for the purpose of a holiday or leisure (Table 2). A further 30 per cent travelled to the area to visit friends and relatives and 22 per cent for business reasons;
- Only 12 per cent of visitors to the GBRMP tourism area went fishing as part of their overnight trip (Table 3); and
- An estimated 40 per cent of overnight visits to the GBRMP tourism area involved a GBRMP experience (Table 3). A visitor was assumed to have a GBRMP experience if they went fishing, went to the beach, went snorkelling or scuba diving, visited the reef or caught a boat/charter boat.

Table 3 Leisure activities undertaken by domestic travellers to the GBRMP tourism regions ^a, 2002/03

	Overnight visitors (^{'000})	Proportion of visitors undertaking activity ^b					GBRMP experience ^c
		Go fishing	Go to beach	Visit the reef	Scuba diving or snorkelling %	Charter boat, cruise or ferry ride	
Bundaberg	576	20	27	2	na	2	39
Fitzroy	965	8	26	2	3	3	30
Mackay	568	6	17	0	na	na	23
Whitsundays	436	17	52	14	15	11	58
Northern Tropical North Queensland	906	5	17	0	na	1	21
Total GBRMP ^d	4 000	12	32	5	6	5	40
<i>GBRMP islands ^e</i>	283	16	76	14	31	13	83
Queensland	16 580	8	36	1	2	3	41
Australia	75 216	8	24	na	1	2	29

na Sampling variability too high for practical purposes.

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. Visitors may report more than one activity.

c. Includes visitors who went fishing, went to the beach, snorkelled/scuba dived, visited the reef or caught a boat/charter boat.

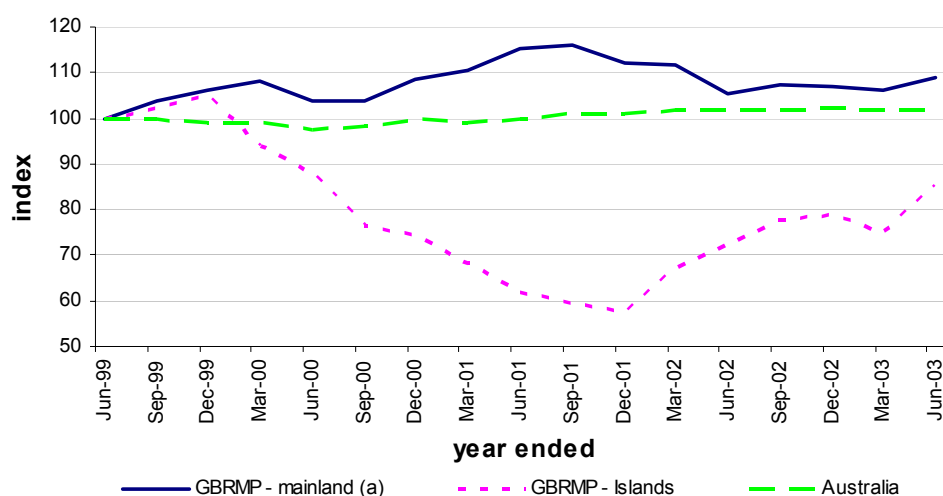
d. Includes the mainland regions and islands within the defined GBRMP tourism area.

e. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism regions.

Trends in domestic overnight travel to the GBRMP tourism area

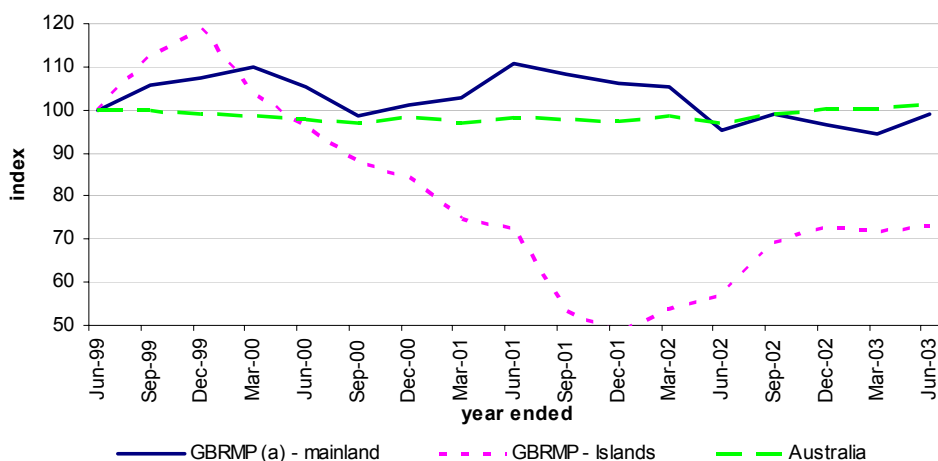
The NVS collection began in January 1998. Time series estimates of domestic visitation to the GBRMP tourism area (Figures 1 and 2) suggest that the number of domestic overnight visitors and visitor nights to mainland regions located within the GBRMP tourism area has trended down since the year ending September 2001. The level of visitation (visitors and nights) to the islands located within the GBRMP tourism area has been increasing since the year ending December 2001 following more than two years of decline. However, the level of domestic overnight visitation to the islands within the GBRMP tourism area was still lower in the year ending June 2003 than in the year ending June 1999.

Figure 1 Domestic overnight visitors, 1998/99 – 2002/03



(a) GBRMP mainland region excludes tourism activity in the corresponding islands.

Figure 2 Domestic visitor nights, 1998/99 – 2002/03



(a) GBRMP mainland region excludes tourism activity in the corresponding islands.

Estimated value of overnight domestic tourism expenditure in the GBRMP tourism area

Expenditure estimates are based on regional expenditure modelling conducted by the BTR. The recently released year ending 2000 estimates have been indexed forward and applied to the year ending June 2003 estimates of visitation to regions located within the GBRMP tourism area. The indexing was based on the change at the national level in average spending (per night) of overnight travellers between the year ending December 2000 and June 2003.

An estimated \$2.5 billion was spent by domestic overnight visitors to the GBRMP tourism area for the year ending June 2003 (Table 4):

- Visitors who undertook some fishing as part of their trip spent an estimated \$324 million or 13 per cent of total spending by domestic overnight tourists; and
- Visitors who had a GBRMP experience (including fishing) as part of their trip spent an estimated \$1.3 Billion - approximately half the total expenditure by domestic overnight visitors to the GBRMP tourism area.

Table 4 Indicators of domestic overnight travel for the GBRMP tourism regions ^a, 2002/03

	Visitors who undertook some fishing on overnight visit		Visitors who undertook a GBRMP experience ^b		Total ^b	
	Visitor nights ^c ('000)	Estimated expenditure ^d (\$000)	Visitor nights ^c ('000)	Estimated expenditure ^d (\$000)	Visitor nights ('000)	Estimated expenditure ^d (\$000)
Bundaberg	512	46 181	1 071	85 314	2 030	152 519
Fitzroy	402	44 359	1 135	156 114	2 963	349 297
Mackay	154	25 266	606	95 176	1 848	254 275
Whitsundays	448	67 555	1 285	228 103	2 136	355 493
Northern Tropical North Queensland	161	19 063	773	106 301	2 840	341 821
Total GBRMP ^e	2 446	323 736	8 733	1 267 299	18 997	2 546 410
<i>GBRMP islands ^f</i>	222	62 404	1 062	298 525	1 270	356 993
Queensland ^g	7 750		36 880		79 551	
Australia ^g	30 996		104 460		302 254	

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. Includes visitors who fished, went to the beach, snorkelled/scuba dived, visited the reef or caught a boat/charter boat.

- c. If the activity is undertaken at all on the visit to the region, all the nights spent in the region by the traveller will be counted against the activity.
- d. Estimated using regional expenditure estimates (2000). Average spending per night has been used (weighted according to the change in domestic per night spending between 2000 and 2003).
- e. The total includes the mainland Statistical Local Areas and islands within the defined GRMPA tourism area. Note that the sum of categories may add to more than the total as some visitors may have visited more than one region on their trip.
- f. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism regions.
- g. GBRMP type activity undertaken but not necessarily in a GBRMP region.

Domestic day travel

There were an estimated 24.2 million domestic day visitors to destinations in Queensland during the year ending June 2003. Of the total number of domestic day visitors to destinations in Queensland, 18 per cent included a visit to the Great Barrier Reef Marine Park (GBRMP) tourism area (Table 5).

An estimated \$400 million was spent by domestic day visitors to the GBRMP tourism area during the year ending June 2003:

- Visitors who undertook some fishing as part of their day trip spent an estimated \$15.4 million or 4 per cent of total spending by day visitors; and
- Visitors who had a GBRMP experience (including fishing) as part of their day trip spent an estimated \$93.5 million or 23 per cent of total expenditure by day visitors.

Table 5 Indicators of domestic day visitors to GBRMP tourism regions ^a, 2002/03

	Day visitors (^{'000})	Expenditure (\$ ⁰⁰⁰)	Average expenditure (\$/day)
Visitors who undertook fishing on overnight visit			
Total GBRMP ^a	238	15 426	65
<i>GBRMP islands</i> ^b	<i>na</i>	<i>na</i>	<i>na</i>
Visitors who undertook a GBRMP experience ^c			
Bundaberg	<i>na</i>	<i>na</i>	<i>na</i>
Fitzroy	310	17 052	55
Mackay	<i>na</i>	<i>na</i>	<i>na</i>
Whitsundays	172	14 292	83
Northern	<i>na</i>	<i>na</i>	<i>na</i>
Tropical North Queensland	310	47 581	153
Total GBRMP ^a	1 189	93 507	79
<i>GBRMP islands</i> ^b	<i>na</i>	<i>na</i>	<i>na</i>
Total			
Bundaberg	632	28 482	45
Fitzroy	953	65 298	69
Mackay	511	48 986	96
Whitsundays	263	19 488	74
Northern	653	50 456	77
Tropical North Queensland	1 393	186 514	134
Total GBRMP ^a	4 447	400 147	90
<i>GBRMP islands</i> ^b	130	21 931	169

na Sampling variability too high for practical purposes.

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism regions.

c. Includes visitors who fished, went to the beach, snorkelled/scuba dived, visited the reef or caught a boat/charter boat.

International travel

There were an estimated 845 000 international visitors to the GBRMP tourism region in 2002/03 or 20 per cent of total international visitors to Australia. These visitors spent 7.9 million nights in the GBRMP tourism area and contributed \$1.1 billion to the local economy (Table 6).

Of the total international visitors to Queensland:

- Forty seven per cent visited the GBRMP tourism area; and
- Thirty two per cent of international visitor nights were spent in the GBRMP tourism area.

The main tourism regions which these 845 000 international visitors visited within the GBRMP tourism area during the year ending June 2003 were:

- Tropical North Queensland (90 per cent of visitors and 68 per cent of nights);
- Whitsundays (25 per cent of visitors and 14 per cent of nights); and
- Northern (13 per cent of visitors and 11 per cent of nights).

The islands located within the GBRMP area were visited by 17 per cent of international visitors to the GBRMP tourism area and contributed 8 per cent of visitor nights within the GBRMP tourism area during the year ending June 2003.

The average length of stay for international visitors travelling within the GBRMP tourism area was 9 nights, however, as some visitors travelled to more than one tourism region within the GBRMP tourism area the average length of stay for individual tourism regions is less than for the total area. International visitors to the Northern and Tropical North Queensland tourism regions had the longest length of stay for an individual region with 8.1 and 7.0 nights respectively. International visitors to the GBRMP islands had an average length of stay on the islands of 4 nights.

Table 6 International visitors, nights and expenditure to the GBRMP tourism regions ^a, 2002/03

	Visitors (‘000)	Nights (‘000)	Average length of stay ^b	Expenditure ^c \$million
Bundaberg	43	158	3.7	7
Fitzroy	84	290	3.5	24
Mackay	32	115	3.6	7
Whitsundays	210	1097	5.2	103
Northern	106	861	8.1	75
Tropical North Queensland	759	5336	7.0	902
Total GBRMP ^d	845	7858	9.3	1118
<i>GBRMP islands ^e</i>	<i>147</i>	<i>592</i>	<i>4.0</i>	<i>128</i>
Queensland	1812	24191	13.4	2932

a. GBRMP tourism areas are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. Average length of stay to the Total GBRMP area is higher than for the individual tourism regions as visitors may visit more than one region on their stay in the GBRMP tourism area.

c. Estimated using international visitor regional expenditure estimates (BTR 1999). Average spending per night has been used (weighted according to the change in domestic per night spending between 1999 and 2002/03.)

d. The total includes the mainland Statistical Local Areas and islands within the defined GRMPA tourism area. Note that the sum of categories may add to more than the total as some visitors may have visited more than one region on their trip.

e. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism areas.

Trends in international visitors to the GBRMP areas

The numbers of international visitors to regions located within the GBRMP tourism area remained relatively static over the 1999/00 – 2001/02 period, before experiencing a 5 per cent decline in 2002/03 (Table 7). With a few exceptions the decline was distributed across all tourism regions within the GBRMP tourism area.

International visitor nights followed a similar trend to international visitors to the GBRMP tourism area; remaining relatively static over the 1999/00 – 2001/02 period before experiencing a decline of 5 per cent in 2002/03. However unlike international visitor numbers to the GBRMP tourism area, international visitor nights spiked in 2000/01, increasing by 6 per cent in 2000/01 when compared to 1999/00.

The level of visitation (visitors and nights) to the islands located within the GBRMP tourism area has varied over the period 1999/00 – 2002/03, also experiencing a decline (9 per cent) over the period 2001/02 to 2002/03.

Table 7 International visitors and visitor nights to the GBRMP tourism regions ^a, 1999/00 – 2002/03

	1999/00	2000/01	2001/02	2002/03
Visitors ('000)				
Bundaberg	53	52	50	43
Fitzroy	109	103	88	84
Mackay	49	41	43	32
Whitsundays	218	209	218	210
Northern	142	133	138	106
Tropical North Queensland	788	799	792	759
Total GBRMP ^b	900	909	894	845
<i>GBRMP Islands ^c</i>	<i>153</i>	<i>140</i>	<i>156</i>	<i>147</i>
Queensland	1988	2014	1893	1812
Visitor nights ('000)				
Bundaberg	327	324	258	158
Fitzroy	537	645	362	290
Mackay	156	293	115	115
Whitsundays	1059	1035	1091	1097
Northern	847	907	1112	861
Tropical North Queensland	5331	5596	5311	5336
Total GBRMP ^b	8257	8800	8248	7858
<i>GBRMP islands ^c</i>	<i>602</i>	<i>608</i>	<i>632</i>	<i>592</i>
Queensland	23562	26871	23705	24191

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. The total includes the mainland Statistical Local Areas and islands within the defined GRMPA tourism area. Note that the sum of categories may add to more than the total as some visitors may have visited more than one region on their trip.

c. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism regions.

Purpose of visit by international visitors

Unlike domestic visitors to the GBRMP tourism area, for the year ending June 2003, 91 per cent of international visitors travelled to the GBRMP tourism area for the purpose of a holiday or leisure (Table 8). Visiting friends or relatives accounted for only 6 per cent of international visitors to the GBR region. These figures are in contrast to total international visitors to Queensland where only 79 per cent of international visitors travelled for the purpose of a holiday during 2002/03.

Similar to the GBRMP mainland regions, international visitors to the GBRMP islands travelled almost solely for the purpose of holiday.

Table 8 International visitors to the GBRMP tourism regions^a by purpose of visit, 2002/03

	Visitors ('000)	Purpose of visit			
		Holiday	VFR	Business %	Other
Bundaberg	43	90	7	2	2
Fitzroy	84	87	7	4	4
Mackay	32	86	10	2	4
Whitsundays	210	98	2	na	1
Northern	106	86	10	3	5
Tropical North Queensland	759	93	3	2	4
Total GBRMP^b	845	91	6	3	4
<i>GBRMP islands^c</i>	162	98	na	na	na
Queensland	1812	79	18	8	6

na Sampling variability too high for practical purposes.

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. The total includes the mainland Statistical Local Areas and islands within the defined GRMPA tourism area. Note that the sum of categories may add to more than the total as some visitors may have visited more than one region on their trip.

c. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism regions.

Country of Origin

In the year ending June 2003, 27 per cent (228 000 visitors) of international visitors to the GBRMP region were from Japan, making Japan the most represented individual country as a source of visitors to the GBRMP region. This was followed by visitors from the United Kingdom (UK) (19 per cent) and Other Europe (19 per cent) (Table 9). Not surprisingly Tropical North Queensland was the most visited tourism region within the GBRMP region. However, visitors from the UK and Other Europe had a tendency to travel more widely to other areas within the GBRMP region.

Table 9 International visitors to the GBRMP tourism regions^a by country of origin, 2002/03

	Visitors ('000)	Country of Origin					
		Japan	Other Asia ^b	North America	UK	Other Europe ^c	Other Countries
		%					
Bundaberg	43	na	7	10	38	29	14
Fitzroy	84	na	5	11	25	39	18
Mackay	32	na	3	11	21	43	19
Whitsundays	210	6	3	14	34	36	6
Northern	106	na	5	9	30	40	14
Tropical North Queensland	759	28	8	15	19	19	11
Total GBRMP^d	845	27	9	15	19	19	11
<i>GBRMP islands^e</i>	162	11	4	16	33	30	7
Queensland	1812	24	19	10	14	12	21

na Sampling variability too high for practical purposes.

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. Other Asia includes all Asian countries excluding Japan.

c. Other Europe includes all European countries excluding the UK.

d. The total includes the mainland Statistical Local Areas and islands within the defined GRMPA tourism area. Note that the sum of categories may add to more than the total as some visitors may have visited more than one region on their trip.

e. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism regions.

Activities undertaken¹ by international visitors

Not surprisingly going to the beach was the most popular 'GBRMP related' activity undertaken by international visitors to the GBRMP tourism areas with 77 per cent of international visitors undertaking this activity. Snorkelling was also a popular activity by international visitors to the GBRMP tourism areas with 59 per cent of international visitors engaging in it. Only 6 per cent of international visitors to the GBRMP tourism area went fishing as part of their visit (Table 10). In total 81 per cent of international visitors engaged in GBRMP related activities. International visitors to the GBRMP islands had a higher propensity (89 per cent) to engage in all types of GBRMP related activities than those who visited the mainland tourism areas.

Table 10 International visitors to the GBRMP tourism regions^a by activity undertaken, 2002/03

	Visitors ('000)	Activity					
		Fishing	Go to the beach ^b	Snorkelling ^c	Scuba diving	Charter boat ^{cd}	GBRMP experience ^e
		%					
Bundaberg	43	na	87	61	30	68	88
Fitzroy	84	na	82	51	23	55	82
Mackay	32	na	84	72	18	49	85
Whitsundays	210	8	86	75	42	62	87
Northern	106	7	80	67	32	60	80
Tropical North Queensland	759	6	76	59	25	49	80
Total GBRMP^f	845	6	77	59	25	49	81
<i>GBRMP islands^g</i>	162	9	87	74	44	66	89
Queensland	1812	5	73	28	12	40	77

na Sampling variability too high for practical purposes.

a. GBRMP tourism regions are a modified version of the standard tourism regions. These regions include corresponding islands within the defined GBRMP tourism area.

b. Going to the beach includes swimming, surfing and diving.

c. Question included only in 2003. Percentages based on total visitors to GBRMP tourism areas during first six months of 2003.

d. Charter boat includes cruises and ferries.

e. GBRMP experience includes visitors who have undertaken any of the activities listed in the Table.

¹ Activities undertaken by international visitors to the GBRMP tourism regions may not have specifically occurred within the region rather during their stay in Australia.

f. The total includes the mainland Statistical Local Areas and islands within the defined GRMPA tourism area. Note that the sum of categories may add to more than the total as some visitors may have visited more than one region on their trip.

g. Visitors who stayed overnight on an island within the GBRMP. Note that these estimates are also counted in the corresponding GBRMP tourism areas.

Economic contribution of tourism in the GBRMP tourism area², 2002/03

Tourism employment in the GBRMP tourism area was calculated using BTR's methodology for calculating regional tourism employment³. The methodology exploits linkages between tourism's shares of employment and output at the national level, based on data contained in the ABS's Australian Tourism Satellite Account (ATSA). Itemised visitor expenditure from BTR's surveys, at the regional level, is mapped to commodity groupings and applied to regional output to obtain tourism's share of expenditure on domestic output for various commodities. Using knowledge of regional employment structures by industry and the linkages between output and employment, tourism's share of employment in the region is obtained for each industry.

Based on this methodology, tourism expenditure was responsible for the employment of about 33 100 persons, or 9.1 per cent of total employed persons, in the GBRMP tourism area in 2002. Employment due to tourism varied between 4.4 per cent in the Bundaberg region and 16.9 per cent in the Tropical North Queensland region (Table 11), highlighting the difference in tourism's intensity across the GBRMP tourism area.

Table 11 Tourism employment by regions in the GBRMP tourism area and Australia, 2002

	Tourism employed persons (‘000)	Share of regional employment due to tourism %	Tourism expenditure required to create one tourism job (‘000)
Bundaberg	1.5	4.4	138
Fitzroy	4.7	5.9	132
Mackay/ Whitsundays	5.2	8.2	121
Northern	4.5	5.2	141
Tropical North Queensland	17.3	16.9	131
Total GBRMP	33.1	9.1	131
Australia ^a	549.0	5.9	125

a. Tourism employment data are from the Australian Tourism Satellite Account 2001–02 (ABS Cat. No. 5249.0).

The estimate of 33 100 persons employed in the GBRMP tourism area represents 6.0 per cent of all Australian tourism employment and 2 per cent of total employment in Queensland in 2002 (based on employment estimates from the Labour Force Survey).

Approximately \$131 000 of tourist expenditure in the GBRMP tourism area resulted in one tourism job in the region, in 2002. This varied between \$121 000 of tourist expenditure per tourism job in the Mackay/Whitsundays tourism region, and \$141 000 of tourist expenditure per tourism job in the Northern tourism region.

² In this section, the GBRMP is comprised of the entire Bundaberg, Fitzroy, Mackay/Whitsundays, Northern and Tropical North Queensland tourism regions, not those as redefined by BTR previously. The regional expenditure modelling conducted by the BTR produces estimates at the tourism region level only. As such, estimates of tourism employment are similarly restricted to tourism regions.

³ This methodology is outlined in detail in Johnson, L., Foo, L.M., Buchanan, I. and Henrick, B. (2001), *BTR Occasional Paper Number 33, Regional Tourism Employment — A Case Study Approach*, Bureau of Tourism Research, Canberra.

Using 1998–99 data, the Productivity Commission⁴ estimated that tourism was responsible for employing approximately 48 000 persons in the GBRMP tourism area. This represented 12 per cent of total employment in the area. Without knowledge of the methodology adopted by the Productivity Commission in deriving its estimates, BTR is unable to comment further on the differences in the two studies.

The regional distributions of tourism employment in the GBRMP tourism area derived by BTR and the Productivity Commission (Table 12) are reasonably similar for all regions with the exception of the Bundaberg and Tropical North Queensland regions.

While the Productivity Commission reported that the Far North region accounted for more than 40 per cent of the value of tourism expenditure in the GBR lagoon and catchment⁵, the BTR estimated that 52 per cent of tourism expenditure in the GBRMP tourism area was in the Tropical North Queensland tourism region. These differences in expenditure estimates appear to have flowed through to the estimates of employment in the Tropical North Queensland region.

Variations in regional definitions may explain the lower BTR estimate of the Bundaberg region’s contribution to employment in the GBRMP region. In 2002, visitor expenditure in the Hervey Bay/Maryborough tourism region was estimated at around \$500 million, compared to \$200 million in the Bundaberg tourism region. Inclusion of the Hervey Bay/Maryborough region in BTR’s estimates would have significantly increased overall employment in the GBRMP tourism area, and the Bundaberg/Wide Bay-Burnett region.

Table 12 Distribution of tourism employment across regions in the GBRMP tourism area, 2002

	BTR estimates	Productivity Commission estimates ^a
	%	
Bundaberg ^b	4.6	16
Fitzroy	14.2	13
Mackay/ Whitsundays	15.6	16
Northern	13.4	15
Tropical North Queensland	52.2	41
GBRMP	100	100

a. Productivity Commission data relate to the 1998–99 financial year.

b. In the BTR study, the Bundaberg tourism region was used. The Productivity Commission estimates are based on the larger Wide Bay-Burnett Statistical Division, comprising the Bundaberg and the Hervey Bay/Maryborough tourism regions.

Investment

The tourism sector has linkages with a large number of industry sectors and its influence on investment varies considerably. Over the past 13 years from 1989/90, Salma (2003) indicates tourism investment has been higher but returns have been low when compared to the rest of the economy. ABS (in Access Economics, 2002, 23) highlights the volatility of the leading tourism related sector, accommodation, which is ‘highly cyclical, suggesting periods of overbuilding to allow occupancy rates to recover’.

⁴ Productivity Commission (2003), p73

⁵ *ibid*, p84.

As shown earlier, regions such as Northern and Tropical North Queensland which have higher reliance on higher yielding international tourism, have been significantly hard hit in the past three years, initially from slowing domestic and international tourism growth. Recently the negative consumer motivation to travel due to overseas terrorism acts, the threat of Severe Acute Respiratory Syndrome and the Iraq conflict have impacted on international travel to the region. In response, tourism providers in the region have switched to traditionally lower yielding domestic tourism (through marketing and price discounting) to maintain volume.

Historically, investment in the GBRMP tourism regions has been considerable, notably in resorts and high star accommodation for international and high-end domestic holiday makers. Access Economics⁶ (2003, 24) estimated that large scale investment (over \$50 million) in Queensland has recently declined by around \$54 million to around \$402 million in 2002/03. Access Economics list a number of medium scale accommodation related developments (worth less than \$100 million) which are either under construction or committed, at Port Hinchinbrook (\$100 million), Agnes Water (\$65 million), Magnetic Island (\$90 million), Palm Cove (\$60 million) and two at Port Douglas (worth around \$90 million in total), with an expansion (undisclosed value) of the Royal Pines resort at Ashmore. However, there are no medium/large scale projects to build cultural and recreational facilities listed by Access Economics in the GBRMP region.

Anecdotal evidence suggests some improvement in investment is currently occurring in smaller scale tourism in the region after a period of inactivity. GBRMPA⁷ reports a pick up in investment (ranging from \$1-10 million) for marine based tourism, mainly in the northern region, including purchases/refits of new boats, and the upgrading or construction of pontoons. Investors are probably anticipating that changes to the zoning regulations for many key sites may lift access and encourage future growth in marine-based tourism.

The decision made by Qantas in 2002 to use Cairns airport for its lower cost Australian Airlines is expected to provide improved prospects for investment in the region. This, combined with an increase in Qantas domestic operations and Virgin Blue's decision to service Cairns and other coastal Queensland towns, has reversed the recent downward trend, caused by the withdrawal of international carriers such as Singapore, MAS and Garuda Airlines in 2001.

Following the demise of Ansett in September 2001 the severe disruption to tourism access to other north and central Queensland regions, growth in total capacity is now increasing for the leading airports in the region in the past year (for the year ending October 2003): Cairns (1 per cent), Mackay (24 per cent), Hamilton Island (26 per cent), Rockhampton (9 per cent), and Townsville (12 per cent). Any future plans by Qantas to develop a discount domestic airline, focussed on the leisure market, could also boost visitation to the region.

The future of Cairns as an entry point into Australia remains central for international visitor growth in the GBRMP region. Although Australian Airlines is dispersing its Australian entry

⁶ The BTR could not locate relevant information on the more recent trends for leading tourism sectors in the GBRMP related regions.

⁷ Discussion with GBRMPA officers, 5-15 November 2003

points to capital cities, it is anticipated that Cairns will remain an important focus particularly for traffic from North Asia, a region predicted to grow strongly. The development of low cost/discount carriers may also lead to additional airlines adopting Cairns as an entry point into Australia. If this occurs, combined with a predicted recovery in growth in international visitors, further investment in Cairns and other leading tourism destinations in the GBRMP region is likely to increase.

3 Forecasts

This section contains 10 and 20 year forecasts (and associated sensitivity analysis) for tourism activity and expenditure in the GBRMP (combined mainland and islands) region. Initially, a brief description of the method used to develop the forecasts and decision frameworks is provided, including a summary of the underlying spreadsheet framework. The main assumptions are then discussed before a presentation of forecasts and sensitivities to the results. Featured in this section are:

- forecasts for tourism **activity** and **expenditure** (undiscounted and discounted at 5 per cent) for each GBRMP associated region (mainland and island), and forecasts for the GBRMP islands (total) for each sector: international, domestic overnight and domestic day travel;
- forecasts for **cumulative real expenditure** (or net present value) at 10 and 20 year intervals; and
- a **sensitivity analysis**, based on changes to visitation growth and discount rates to highlight the possible range of estimates for longer term earnings. From this assessment, 'rules of thumb' have been developed to indicate the change in tourism expenditure resulting from lower visitation (to reflect a decline in tourism amenity values over time) and the risks attached to tourism earnings.

Although the main text focuses on the GBRMP region as a whole, the main findings for each sub-region within the GBRMP region are also discussed, with summary tables containing forecasts and sensitivity results for each sub-region provided in Appendix A.

Methodology

To develop a typical cost benefit analysis framework, the net present value of one scenario is compared to an alternative scenario(s), discounted by the level of commercial and social risk and uncertainty attached to undertaking such a venture. Unfortunately a cost benefit framework to value the potential impact of different zoning regimes on the GBRMP is difficult. The main difficulties in developing estimates for different scenarios are:

- the zoning changes are primarily **based on ecological grounds** to develop a sustainable framework for marine life, and at the same time to reduce the potential human impact and to preserve industry activity (Hand, 2003, 8);
- the **complexity** in assessing the impact of the micro-level changes to reef access for different industries for different regions on the reef. The headline increase in the preservation zone to 33 per cent is largely a result of many amendments to industry uses at individual islands or small reefs. At this level, there are substantial shifts in future revenue streams for different industries, making it difficult to estimate shifts in consumer and producer surpluses for leading industries over time as a result of the zoning changes; and
- the **strong linkages between reef-linked visitation to the GBRMP islands** and the adjacent mainland regions. As results from the snapshot analysis indicate, there is a high correlation between tourism related activity in the islands and tourism earnings from the GBRMP region. For example, a boost to marine-based reef activity would also

provide a boost for mainland tourism related industries, such as accommodation, cafes and restaurants.

Although revisions to various drafts of the zoning arrangement have included additional refinements to balance GBRMP industry requirements (i.e. tradeoffs between various industries), a tourism based economic related framework has not been developed to aid decision-making.

Despite not providing explicit forecasts for no zoning changes, this study still provides an evaluation tool for the tourism sector. The forecasts provided here assume the revised zoning plan would be implemented for the combined mainland/island regions of the GBRMP. Implicit in this assumption is no loss of environmental amenity values that would deter future travel to the GBRMP region. The sensitivity analysis provides a range of (expected) expenditure related to changes to visitor growth and discount rates, which GBRMPA can use to indicate a range of possible outcomes if the proposed zoning changes are not implemented.

There are several issues in devising this assessment. First, as shown earlier, there are only five years' data available⁸ to calculate growth trends for the period out to 2022. As the industry has also faced considerable volatility during the 1998/99 to 2002/03 period, qualitative judgement will be necessary to devise viable future regional growth rates⁹.

Second, it should be made clear that the sensitivity analysis does not represent an implicit value for the no change to zoning scenario. Such a baseline forecast would rely heavily on a significant amount of subjective judgement and for this reason could be challenged on the basis that no-change will lead to a deterioration of environmental values.

The BTR believes there are significant risks that any deteriorating environmental values will lead to lower visitation growth, but the rate and linkages of perceived deterioration of environmental values and visitor responses are extremely difficult to quantify. On this basis, the forecasts provided in this study should be interpreted as representing sensitivity to the range of benefits that could be earned for the region's tourism industry. This information can then be used to match the benefits and losses attached to other industries.

The third main issue is the concept of discount factors. This study uses a 5 per cent discount value in its baseline assessment to incorporate risk and uncertainty associated with long term cumulative income streams. Conceptually, the **expected** (or mean) future income streams could be similar for each of the *revised* zoning and the *no change to zoning* scenarios, if estimates for future visitation and expenditure are similar.

⁸ Data for domestic travel are available from 1998/99 and from 1999/2000 for international travel

⁹ An attempt was made to develop differential growth rates for overnight travel to particular regions, based on applying standard growth rates for own region, intrastate and interstate travel. Despite the substantial regional difference between these types of travel, this approach did not provide sufficient variation plus there is little information to justify such a methodology. Instead it was decided to use the same growth rates for all GBRMP regions.

However, the **risks attached to each scenario are not the same**, as the revised zoning plan should reduce the risk to future income streams, either by lowering the production **risk** of direct ecological damage caused by fishing or by speeding up recovery if other natural or man-made events negatively impact on the reef's amenity values for tourism. This change in risk to expected income streams can be measured by varying the discount rate. This information can then be compared to changes for other main variables which can potentially impact on expected income.

The framework

A spreadsheet framework was developed to provide baseline forecasts for the international, domestic overnight and daytrip sectors. The international travel sector for each region within the GBRMP region was further decomposed by leading markets:

- Japan;
- Other Asia;
- United Kingdom;
- Other Europe;
- North America (United States and Canada); and
- Other countries (including New Zealand),

to incorporate the latest 10 year visitor growth forecasts made by the Tourism Forecasting Council (made in May 2003) to obtain GBRMP visitor forecasts.

Forecasts for the GBRMP islands represent visitation to all islands on the reef adjacent to the Australian coast. For this framework, the islands represents a share of the GBRMP (mainlands and islands total).

Assumptions

The framework relies on exogenous assumptions for visitor growth, average length of stay and average spend for each travel sector. As shown in a previous section, there has been considerable volatility in regional visitation for all sectors in the GBRMP region, and this causes difficulty in estimating longer term trends. Because of this, recourse was made to other sources such as forecasts made by the Tourism Forecasting Council (for broader Australian trends) and expert opinion.

a) Visitor growth

The assumption for average 20 year growth rates for domestic overnight visitors to the region is 0.9 per cent in the next 10 years to 2012/13 before slowing to 0.7 per cent in the second decade of the projection period to 2022/23. BTR assumes that long term growth in overnight travel will be higher than the current TFC estimate (0.5 per cent), but marginally lower than the expected annual Australian population growth of around 0.9-1.3 per cent for the next 20 years. Day travel to the region is forecast to increase by 0.5 per cent per year.

Over the next 10 years, domestic overnight travel to the GBRMP region is likely to increase faster than the national average, sourced by continued migration to Queensland, and above

average prospects for **economic growth** in the state of Queensland. Both these factors, combined with some switching from international travel (as a result on ongoing security concerns) have boosted intrastate (drive) travel to the GBRMP region particularly the southern and central parts of the region. The slow down of growth in domestic overnight travel in the 2012/13 to 2022/23 period reflects overall slowdown in Australian population growth and an increased share of the population over 65 years of age who have a lower propensity to undertake travel or who spend less on travel.

International travel¹⁰, is anticipated to recover in 2003/04, with international visitors forecast to increase by around 9.1 per cent in the 2003/04 financial year. After next year, longer term growth in international visitors is forecast to moderate to around 4.8 per cent for the next nine years to 2012/13. Average visitor growth is then assumed to slow again to around 4.3 per cent for the second decade of the forecast period, reflecting mainly a slowdown to growth of current high growth inbound markets such as China and South Korea.

Table 13 Assumptions, average annual visitor growth, all sectors

	Regions							Total GBRMP	GBRMP islands only
	Bundaberg	Fitzroy	Mackay	Whitsundays	Northern	Tropical North Queensland			
	%								
International									
2003/04	8.0	7.7	7.6	8.2	7.7	10.0	9.1	8.0	
2004/05 - 2022/23	4.7	4.9	4.9	4.6	4.8	4.5	4.5	5.1	
Domestic Overnight									
2003/04 - 2012/13	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	
2013/14 - 2022/23	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Domestic Day trips									
2003/04 - 2022/23	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	

b) Average length of stay and visitor nights

The average length of stay (ALS) by visitors in a region is generally a function of the purpose of visit. For simplicity, it is assumed the ALS in the GBRMP region will remain constant at the 2002/03 level over the forecast period to 2022/23. On this basis, domestic overnight visitors are assumed to stay in the region for 4.7 nights.

As each international market is modelled independently, the proportional contribution of each market is forecast to change over the projection period. On this basis, the average length of stay for international visitors is assumed to increase marginally by 0.3 nights to 9.6 nights in 2022/23.

For international travel, the fixed ALS assumption for each market is different to the slow decline forecast by the TFC, which assumes that a marginal decrease in the ALS will stem from a decline in the share of traditionally longer stay visitors, such as those travelling for education and employment purposes. As the region is a major holiday destination, having over 90 per

¹⁰ Minor downward adjustments were made to the TFC forecasts for international visitors.

cent of its visitors describing the main purpose of their visit as 'holiday', the impact of declining longer stay visitors will remain low.

c) *Expenditure*

In 2002/03, average expenditure per night by international visitors in the GBRMP region was estimated at \$142 per night, extrapolated from the latest regional expenditure estimate for the region in 1999¹¹. Similarly, average domestic visitor per night expenditure was estimated at around \$134, with domestic day visitors estimated to spend \$90 per day (Table 14). Similar to the ALS assumption, average expenditure per night/day is likely to be highly volatile, (dependent on the purpose of visit mix and the economic and political environment) and it is assumed that average expenditure will remain constant in real terms at the 2002/03 average for the forecast period.

Table 14 Average expenditure, by travel category, \$ per night (\$ per day for domestic day visits)

	Regions						Total GBRMP	GBRMP islands only
	Bundaberg	Fitzroy	Mackay	Whitsundays	Northern	Tropical North Queensland		
	\$							
International	42.2	82.9	57.2	93.9	87.6	169.0	142.0	215.9
Domestic Overnight	75.1	117.9	137.6	166.4	120.4	152.2	134.0	281.1
Domestic Daytrips	45.1	68.5	95.9	74.1	73.9	133.9	90.0	169.0

d) *A cautionary note on assumptions used in the framework*

The framework assumes a constant ALS and (real) expenditure per night, implying average trip expenditure will be constant in real terms over the next 20 years to 2022/23. For international travel to Australia, there is some chance the structure of leisure travel to Australia may result in higher growth in international visitors than assumed, but each on average spending less time in Australia. This outcome would have direct impacts for regions which currently have a high international component in their visitor mix, such as the GBRMP tourism region. This may also result in higher per night expenditure as an offsetting factor, leading to less change in trip expenditure.

A second cautionary note is the assumption of constant real expenditure growth over time. It is likely that international travel may be more affected by prevailing exchange rates, and future shifts in relative exchange rates may impact on trip expenditure in the GBRMP regions. For example, the recent appreciation of the Australian currency means that international travellers have less purchasing power in Australia relative to home country travel.

Domestic travel expenditure per trip is assumed to remain constant in real terms over time. However, evidence from the five year trends for NVS day and overnight trips suggests that in real terms, expenditure for both forms of travel is falling (more so for day travel), but more time series data is required before confirming that long-term assumptions for domestic travel expenditure should be declining over time.

¹¹ The scaling factor from 1999 to 2002/03 is based on the change in Australian average expenditure per night/day which occurred over this period.

Forecasts of tourism activity in the whole GBRMP region

This section provides a summary of the main findings related to the total GBRMP (combined mainland and adjacent islands) region.

a) Visitors

Domestic overnight visitors are forecast to expand to nearly 4.7 million visitors, an increase of around 18 per cent in the period to 2022/23. Day travel to the region is expected to expand to 4.9 million visitors in 2022/23, assuming an average annual growth rate of 0.5 per cent (Table 15).

Table 15 Visitor forecasts, by financial year, for GBRMP tourism regions, (mainland and islands), 2012/13 and 2022/23

	Regions						Total GBRMP	GBRMP islands only
	Bundaberg	Fitzroy	Mackay	Whitsundays	Northern	Tropical North Queensland		
	('000)							
International								
2002/03	43	84	32	210	106	759	845	147
2012/13	73	143	55	350	179	1 262	1 401	249
2022/23	113	224	86	531	279	1 940	2 138	406
Domestic Overnight								
2002/03	576	965	568	436	906	1 298	4 000	283
2012/13	629	1055	621	477	991	1 420	4 374	310
2022/23	674	1132	666	511	1063	1 522	4 690	332
Domestic Day trips								
2002/03	632	953	511	263	695	1 393	4 447	130
2012/13	664	1 002	537	276	731	1 464	4 674	137
2022/23	698	1 053	565	291	768	1 539	4 913	144

a Note that the sum of individual GBRMP regions does not match the total GBRMP region for international and domestic overnight visits as travellers can visit more than one region on their trip. The framework assumes that international visitors visit 1.47 individual regions on average when they visit the GBRMP total region. Domestic visitors travel to nearly 1.2 regions when they travel to the GBRMP region

International visitors to the region are forecast to increase by 2.5 times to 2.1 million in 2022/23, with the main region, Tropical North Queensland, forecast to approach 2 million visitors in 2022/23 (Table 15). Average annual growth for all travel (international and domestic (overnight and day) visitors) to the GBRMP (mainland and island) region is forecast to be 1.8 per cent per year to 11.7 million visitors by 2022/23.

Overall, around 29 million international visitors, 87 million domestic overnight visitors and 94 million domestic day visitors are forecast to visit the region over the period, 2003/04 to 2022/23 period (Table 16).

Table 16 Visitor forecasts, cumulative, for GBRMP tourism regions, (mainland and islands), 2012/13 and 2022/23^a

	Regions						Total GBRMP	GBRMP islands only
	Bundaberg	Fitzroy	Mackay	Whitsundays	Northern	Tropical North Queensland		
	('000)							
International								
2002/03	43	84	32	210	106	759	845	147
2012/13	591	1 150	443	2 844	1 441	10 336	11 443	2 020
2022/23	1 528	2 995	1 155	7 275	3 743	26 428	29 231	5 312
Domestic Overnight								
2002/03	576	965	568	436	906	1298	4 000	283
2012/13	6052	10 141	5 969	4 582	9 521	13 640	42 033	2 974
2022/23	12 586	21 110	12 426	9 538	19 820	28 395	87 492	6 191
Domestic Day trips								
2002/03	632	953	511	263	695	1393	4 447	130
2012/13	6496	9 796	5 253	2 703	7 144	14 319	45 711	1 366
2022/23	13 325	20 093	10 774	5 545	14 653	29 370	93 761	2 741

a Cumulative for periods 2003/04 to 2012/13 and 2013/14 to 2022/23

b) Visitor Nights

As total visitor nights are a function of visitors multiplied by visitor nights, total visitor nights in the region are forecast to grow by the same growth rate as visitors. Total visitor nights are forecast to reach 42.8 million in 2022/23. Total visitor nights (cumulative) are forecast to reach 691 million nights in the period to 2022/23 (Table 17).

Table 17 Visitor nights, cumulative total, GBRMP tourism regions, (mainland and islands), 2012/13 and 2022/23^a

	Regions						Total GBRMP	GBRMP islands only
	Bundaberg	Fitzroy	Mackay	Whitsundays	Northern	Tropical North Queensland		
	('000)							
International								
2002/03	158	290	115	1 097	861	5 336	7 858	592
2012/13	2 126	3 993	1 563	14 761	11 845	72 448	106 736	8 079
2022/23	5 423	10 426	4 104	37 736	31 402	186 753	275 845	21 249
Domestic Overnight								
2002/03	2030	2 963	1 848	2 136	2 840	7 180	18 997	1 270
2012/13	21 328	31 137	19 420	22 446	29 844	75 452	199 628	14 444
2022/23	44 358	64 819	40 427	46 727	62 128	157 070	415 528	29 979

a Cumulative for periods 2003/04 to 2012/13 and 2013/14 to 2022/23

c) Tourism Expenditure

Total tourism expenditure was estimated at \$4.1 billion in 2002/03, marginally lower than the \$4.3 billion estimate made by the Productivity Commission for the 1999/2000 financial year. Although overall visitation to the region in 1999/2000 is marginally lower, the difference may be due to the BTR using only Statistical Local Areas that are adjacent to the GBRMP region, and different methodology to calculate the regional expenditure estimates.

Real expenditure in the GBRMP region is forecast to increase by 56 per cent to \$6.3 billion by 2022/23. This estimate is close to the Productivity Commission estimate of \$6.4 billion for total tourism expenditure in the region in 2020 (Productivity Commission, 2003, 375).

Around 78 per cent of the \$2.3 billion increase in annual expenditure is forecast to be sourced from international visitors with the international sector's share of expenditure forecast to increase from 28 per cent in 2002/03 to 46 per cent in 2022-03. The Tropical North Queensland region is forecast to increase its share of total expenditure by seven percentage points to 60 per cent in 2022/23 (Table 18).

Cumulative real tourism expenditure in the GBRMP region over the period 2003/04 to 2022/03 is forecast at \$103 billion. By introducing a real discount rate of 5 per cent¹² for average per night/day expenditure to account for the potential risk to earnings, it is assumed that the expected cumulative tourism expenditure in the region will be \$62.2 billion (Table 19).

Table 18 GBRMP tourism expenditure estimates, by financial year, by travel category, \$ billion

	Regions						Total GBRMP	GBRMP islands only
	Bundaberg	Fitzroy	Mackay	Whitsundays	Northern	Tropical North Queensland		
	\$ million							
International								
2002/03	7	24	7	103	75	902	1118	128
2012/13	11	41	11	170	130	1502	1865	215
2022/23	17	65	18	259	211	2343	2912	351
Domestic Overnight								
2002/03	153	349	254	355	342	1 093	2 546	357
2012/13	166	382	278	389	374	1 195	2 785	420
2022/23	179	410	298	417	401	1 282	2 986	451
Domestic Day trips								
2002/03	28	65	49	19	51	187	400	22
2012/13	30	69	51	20	54	196	421	23
2022/23	31	72	54	22	57	206	442	24
Total								
2002/03	188	439	310	478	469	2 181	4 064	507
2012/13	207	492	341	580	558	2 893	5 070	658
2022/23	227	547	370	697	669	3 831	6 340	825

The decline in real discounted expenditure reflects the fact that the 2.2 per cent growth in total (real, undiscounted) expenditure is lower than the discount rate of 5 per cent. Although the international sector is expected to contribute most of the growth in expenditure, combined domestic day and overnight visitors are forecast to earn around \$39.5 billion in discounted terms, or around 64 per cent of discounted cumulated tourism expenditure in the forecast period from 2003/04 to 2022/23 (Table 19).

¹² The real discount rate refers to the risk premium attached to deriving an 'expected' future return above the assumed rate of inflation. Generally, 5 per cent is the standard real discount rate used to assess income streams over a long time frame (say 20 years).

Table 19 GBRMP tourism expenditure^a, cumulative, no discount and discounted at 5 per cent, by travel category, \$ billion

	Cumulative total, no discounting				Cumulative total, 5 per cent discount rate			
	International	Domestic overnight	Domestic day trips	Total Expenditure	International	Domestic overnight	Domestic day trips	Total expenditure
	\$ billion							
2002-03	1.1	2.5	0.4					
2012-13	15.2	26.8	4.1	46.0	11.5	20.6	3.2	35.3
2022-23	39.2	55.7	8.4	103.3	22.7	34.3	5.2	62.2

a. Cumulative for periods 2003/04 to 2012/13 and 2013/14 to 2022/23

Sensitivity analysis

This sensitivity analysis was undertaken by varying the change in visitor growth rates and the discount rate. Discussed in this section is a sensitivity analysis for the total GBRMP tourism region. The equivalent sensitivity tables for each region within the GBRMP region are provided in Appendix A.

Interpretation of these tables is simple. The shaded area shows the baseline assumption to visitor growth (columns) and discount rates (rows) used to generate forecast expenditure estimates to 2022/23. Where the shaded column and rows meet shows the baseline estimate for total cumulative expenditure of \$62.2 billion for all sectors in the period, 2002/03 to 2022/23.

The sensitivity analysis of the above forecasts suggests that changes to the risk attached to future earnings (the discount rate) has a significant influence on the expected tourism expenditure in the GBRMP region over the next 20 years. For example, if there is no change in the annual number of visitors, but the perceived risk is lower (i.e. no change in visitation and a 3 per cent discount rate), raises the expected cumulative expenditure by \$13 billion.

In contrast, a 20 per cent decrease in visitor growth in the GBRMP region (equivalent to 4.5 million visitors) is forecast to lower total tourism earnings by \$2.1 billion over the period to 2022/23. If there is no growth in the number of visitors to the region in the next 20 years, total tourism expenditure is forecast to fall by \$6.9 billion to \$55.2 billion. In contrast, by reducing the discount rate from 5 to 3 per cent, increases the future income stream by \$13 billion.

Overall, as a rough rule of thumb, a one per cent reduction in the perceived risk to the income stream is equivalent to the total increase in real tourism expenditure sourced from the expected increase in domestic and international visitors over the next 20 years to 2022/23.

Finally, if future earnings are not discounted, the sensitivity to changes in visitation increases. For example, if there is a 20 per cent decline in visitation to the region by all sectors, tourism earnings in the region is forecast at \$99.4 billion, lower by \$3.9 billion when compared to the no change in visitation estimate (\$103.3 billion).

Table 20 Sensitivity analysis, cumulative tourism expenditure in the GBRMP tourism region (combined mainland and islands), 2003/04 - 2002/23, combined, international and domestic sectors, \$ billion

	Percentage change to the growth in visits to the region			
	No growth	20 per cent lower	No change	20 per cent higher
Discount Rate				
No discount	90.2	99.4	103.3	108.0
1 per cent	81.1	89.2	92.6	96.6
3 per cent	66.4	72.6	75.2	78.3
5 per cent	55.2	60.1	62.2	64.6
7 per cent	46.7	50.6	52.2	54.1

4 Conclusion

Total tourism expenditure in the GBRMP (combined mainland and adjacent islands) is forecast at \$62.2 billion over the period 2003/04 to 2022/23, mainly based on a 4-5 per cent average annual increase in international visitation, 0.7-0.9 per cent growth in domestic overnight visitors and 0.5 per cent increase in domestic day trips. The discount rate used to provide a baseline cumulative assessment is 5 per cent.

Overall the health of the Marine Park is integral to future tourism growth, particularly deriving a 'satisfactory' tourism experience. The rezoning of the GBRMP is one step to minimise the risk to tourism growth in the region, provided the linkage between visitation to the region and marine park experience remains high, particularly for international visitors.

It is forecast the mix of travel to the region will become increasingly reliant on the international sector, with this sector's share of the region's expenditure increasing from 28 to 46 per cent at the end of the forecast period in 2022/23. While the domestic share is forecast to decline, as seen recently, it can provide an important alternative source of visitation if a major downturn occurs for the international sector.

As a cautionary note, an increased reliance on international travel to the GBRMP region also incurs higher risks. As experienced in the past few years, the international travel sector to Australia has not grown, as travellers react to ongoing terrorism threats and other political uncertainty.

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Appendix One - Sensitivity Analysis for individual regions within the GBRMP (mainland and island) region

The sensitivity tables provided below show the impacts which changes to visitor growth and discount rates have on cumulative income streams for each region within the Great Barrier Reef Marine Park (mainland and island) region. To interpret these results, please refer to the sensitivity analysis for the GBRMP region (mainland and island), and Table 20.

Table A1 Sensitivity analysis, cumulative tourism expenditure, 2003/04 to 2002/23, combined, international and domestic sectors, \$ billion

a) Bundaberg

	Percentage change to the growth in visits to the region			
	No growth	20 per cent lower	No change	20 per cent higher
Discount Rate				
No discount	3.8	4.0	4.2	4.3
1 per cent	3.4	3.6	3.7	3.9
3 per cent	2.8	3.0	3.1	3.2
5 per cent	2.4	2.5	2.6	2.6
7 per cent	2.0	2.1	2.2	2.2

b) Fitzroy

	Percentage change to the growth in visits to the region			
	No growth	20 per cent lower	No change	20 per cent higher
Discount Rate				
No discount	8.9	9.6	9.9	10.3
1 per cent	8.0	8.6	8.9	9.2
3 per cent	6.6	7.1	7.3	7.5
5 per cent	5.5	5.9	6.1	6.3
7 per cent	4.7	5.0	5.1	5.3

c) Mackay

	Percentage change to the growth in visits to the region			
	No growth	20 per cent lower	No change	20 per cent higher
Discount Rate				
No discount	6.2	6.6	6.8	7.1
1 per cent	5.6	6.0	6.1	6.4
3 per cent	4.6	4.9	5.0	5.2
5 per cent	3.9	4.1	4.2	4.3
7 per cent	3.3	3.5	3.5	3.7

d) Whitsundays

	Percentage change to the growth in visits to the region			
	No growth	20 per cent		20 per cent
		lower	No change	higher
Discount Rate				
No discount	10.0	11.2	11.7	12.4
1 per cent	9.0	10.1	10.5	11.1
3 per cent	7.4	8.2	8.6	9.0
5 per cent	6.2	6.8	7.1	7.4
7 per cent	5.2	5.8	6.0	6.2

e) Northern

	Percentage change to the growth in visits to the region			
	No growth	20 per cent		20 per cent
		lower	No change	higher
Discount Rate				
No discount	10.1	10.9	11.3	11.8
1 per cent	9.1	9.8	10.1	10.5
3 per cent	7.5	8.0	8.3	8.6
5 per cent	6.2	6.7	6.9	7.1
7 per cent	5.3	5.6	5.8	6.0

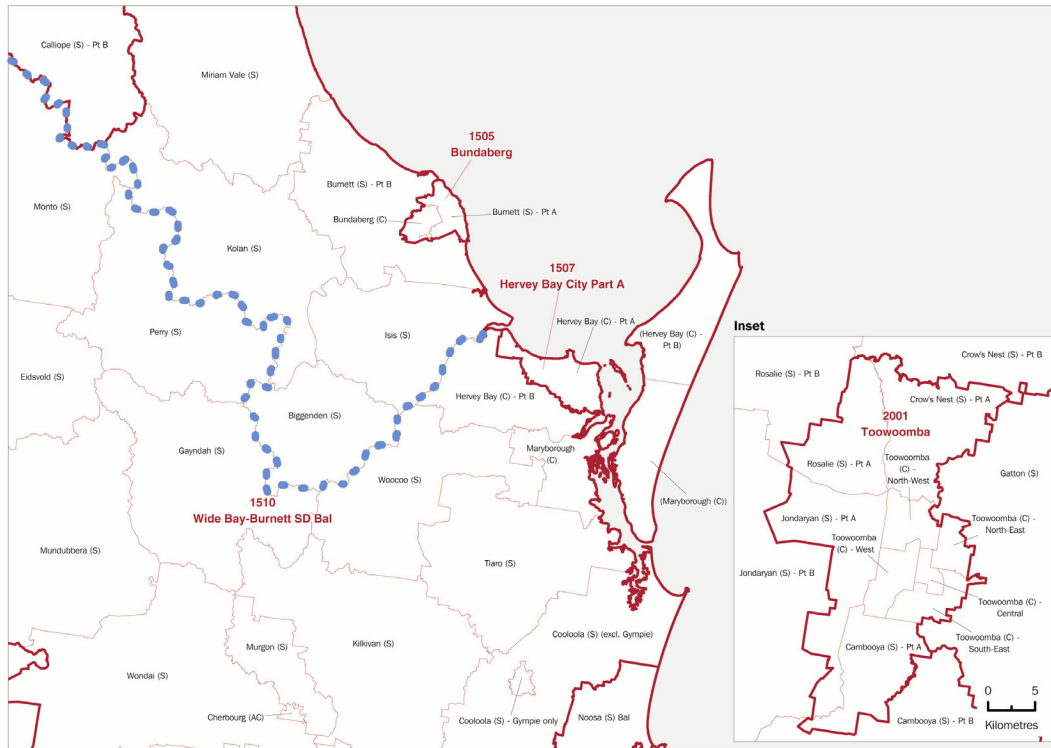
f) Tropical North Queensland

	Percentage change to the growth in visits to the region			
	No growth	20 per cent		20 per cent
		lower	No change	higher
Discount Rate				
No discount	51.2	57.1	59.4	62.2
1 per cent	45.9	51.1	53.1	55.5
3 per cent	37.5	41.5	43.0	44.8
5 per cent	31.1	34.2	35.4	36.8
7 per cent	26.2	28.7	29.6	30.7

g) Great Barrier Reef Marine Park Islands (only)

	Percentage change to the growth in visits to the region			
	No growth	20 per cent		20 per cent
		lower	No change	higher
Discount Rate				
No discount	12.7	13.2	13.5	13.8
1 per cent	11.4	11.8	12.1	12.4
3 per cent	9.3	9.6	9.8	10.1
5 per cent	7.7	8.0	8.1	8.3
7 per cent	6.5	6.7	6.8	7.0

Figure 5 GBRMP Enlargement 1, 2003



QUEENSLAND — STATISTICAL SUBDIVISIONS AND STATISTICAL LOCAL AREAS, 2002 EDITION
ENLARGEMENT 1

Note: Areas included in GBRPM regions are left of the dashed line.

Appendix Three - SLAs included in GBRMP region, 2003

Region Name	SLA	SLA code	Region Name	SLA	SLA code
Bundaberg				Rosslea	37058
	Biggenden (S)	30700		Rowes Bay-Belgian Gardens	37062
	Bundaberg (C)	31810		South Townsville	37065
	Burnett (S) - Pt A	31981		Stuart-Roseneath	37068
	Burnett (S) - Pt B	31984		Vincent	37071
	Isis (S)	34000		West End	37074
	Kolan (S)	34400		Wulguru	37078
	Miriam Vale (S)	35100		Townsville (C) - Pt B	37084
Fitzroy			Tropical North Queensland		
	Calliope (S) - Pt A	32101		Atherton (S)	30200
	Calliope (S) - Pt B	32104		Badu (IC)	30270
	Fitzroy (S) - Pt A	33151		Bamaga (IC)	30330
	Fitzroy (S) - Pt B	33154		Boigu (IC)	30770
	Gladstone (C)	33350		Cairns (C) - Barron	32062
	Livingstone (S)	34550		Cairns (C) - Central Suburbs	32065
	Mount Morgan (S)	35350		Cairns (C) - City	32066
	Rockhampton (C)	36350		Cairns (C) - Mt Whitfield	32068
Mackay				Cairns (C) - Northern Suburbs	32072
	Broadsound (S)	31700		Cairns (C) - Trinity	32074
	Mackay (C) - Pt A	34762		Cairns (C) - Western Suburbs	32076
	Mackay (C) - Pt B	34765		Cairns (C) - Pt B	32078
	Mirani (S)	35050		Cardwell (S)	32200
	Nebo (S)	35700		Cook (S) (excl. Weipa)	32501
	Sarina (S)	36550		Croydon (S)	32600
Whitsundays				Dauan (IC)	32740
	Bowen (S)	30950		Douglas (S)	32800
	Whitsunday (S)	37330		Eacham (S)	32900
Northern				Erub (IC)	33030
	Burdekin (S)	31900		Etheridge (S)	33100
	Dalrymple (S)	32700		Hammond (IC)	33650
	Hinchinbrook (S)	33800		Herberton (S)	33700
	Palm Island (AC)	35770		Hope Vale (AC)	33830
	Kelso	36801		Iama (IC)	33840
	Kirwan	36804		Injinoo (AC)	33930
	Thuringowa (C) - Pt A Bal	36807		Johnstone (S)	34150
	Thuringowa (C) - Pt B	36831		Kubin (IC)	34430
	Aitkenvale	37001		Lockhart River (AC)	34570
	City	37003		Mabuiag (IC)	34740
	Cranbrook	37007		Mareeba (S)	34850
	Currajong	37012		Mer (IC)	34970
	Douglas	37014		New Mapoon (AC)	35730
	Garbutt	37015		Poruma (IC)	36100
	Gulliver	37018		Saibai (IC)	36470
	Heatley	37023		St Pauls (IC)	36480
	Hermit Park	37026		Seisia (IC)	36570
	Hyde Park-Mysterton	37027		Torres (S)	36950
	Magnetic Island	37031		Ugar (IC)	37090
	Mt Louisa-Mt St John-Bohle	37033		Umagico (AC)	37110
	Mundingburra	37034		Warraber (IC)	37170
	Murray	37038		Wujal Wujal (AC)	37570
	North Ward-Castle Hill	37041		Yarrabah (AC)	37600
	Oonoonba-Idalia-Cluden	37044		Yorke (IC)	37650
	Pallarenda-Shelley Beach	37047	Great Barrier Reef		
	Pimlico	37051		Great Barrier Reef Islands	39997
	Railway Estate	37054		Great Barrier Reef Islands	39998