

**Visitors to
Solitary Island Marine Park
their behaviours, attitudes and perceptions.**

An analysis of surveys: 2002 to 2005.

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2005**

Executive Summary

The Solitary Islands Marine Park (SIMP) incorporates a range of estuaries, sandy beaches, rocky shores, islands and reefs, which support an array of marine plants and animals. The Marine Park is not only ecologically valuable, but also important to the region socially, culturally and economically. Tourism is a key industry in the region with visitors enjoying a range of activities in the Marine Park such as swimming, surfing, fishing, canoeing and sight seeing.

To better understand Marine Park use and visitor satisfaction, a visitor monitoring survey was initiated in 2002. The survey aimed to identify visitor demographics, activities undertaken, locations visited, the importance of experiences and advisory material as well as general visitor satisfaction.

Methods

Data was collected using several techniques: face to face interviews, provision of survey forms directly to visitors in the field to be completed at a later date and forms left in popular tourist locations. The surveys have been conducted in December and January 2003, 2004 and 2005. Survey teams targeted the majority of areas adjacent to the Marine Park, including Sandon Village, Minnie Water, Diggers Camp, Wooli, Red Rock, Arrawarra, Mullaway, Woolgoolga, Emerald Beach, Moonee, Sapphire and Coffs Harbour.

Results

Results indicate that visitors are primarily aged between 25 – 55 years and 80% come from New South Wales (just under half live within two hours drive of the Marine Park). Of those travelling from locations over two hours drive from the Marine Park, approximately three-quarters use commercial accommodation, primarily caravan parks and holiday homes/units.

The most popular activity is usage of beach, in particular Woolgoolga, Wooli, Minnie Water and Moonee. Swimming and surfing account for about 70% of all physical activities mentioned. About 10% of respondents mentioned fishing. Of those that mentioned fishing, estuarine fishing is most popular (40%), followed by beach fishing (25%).

The “usefulness” of marine park advisory material (signs, recreational user guide, brochures, boundary markers etc) were consistently rated useful (about five on a scale of seven), as was the importance of these products. The “importance” of seeing marine life proved to be very important with respondents scoring about six out of seven. The importance of catching a fish was generally rated about four out of seven. The overall satisfaction of visitors to the Marine Park was between approximately 5.3 and 6.5 out of a possible seven.

Other feedback from visitors that will assist with the future management of the marine park included comments on the most common sources of satisfaction: relaxing environment, beaches, the beauty, lack of crowds, clean water, surf, good weather, swimming, good for children, fishing and seeing marine life to name a few. Many suggestions were also provided that related to the provision of additional facilities and information, as well as suggestions to either increase or decrease access to some areas.

Recommendations highlight the need for sufficiently large samples and that future surveys are constructed to enable an assessment of “importance” against “satisfaction”.

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Appendices

1.0 Introduction

1.1 This report was commissioned by Ms Libby Sterling, Marine Park Manager, Solitary Islands Marine Park.

1.2 The purpose of the report is to analyze data collected from surveys undertaken in 2002/3, 2004 and 2005. More specifically, the purpose is to identify the extent to which there have been consistent behaviours and perceptions, or changes thereof, by visitors to the park with reference to:

- a) recreational use of the park – spatial and types of activities;
- b) awareness of regulations within the Park relating to zoning;
- c) sources of knowledge about the Park, its attractions and facilities;
- d) types of fishing activity undertaken;
- e) perceptions of usefulness of key Park user guides;
- f) socio-demographics of Park visitors and
- g) degree of usage of commercial accommodation when visiting the Park.

1.3 A past report entitled '*Characteristics, attitudes and perceptions of visitors to the Solitary Islands Marine Park: 2002-2003*' describes the nature of the Park, and was completed in 2004. This report does not repeat that description but the introductory paragraphs to the above report are appended to this report for those readers not familiar with the Park as Appendix One. In October 2003 an operational plan for the Park was completed in accordance with the requirements of the Marine Parks Act of 1997, and this report represents a partial component of the continuous monitoring of the Park, the plan and its management, and potentially is a partial fulfillment of objective 7.4 relating to a need to develop a database and information set.

1.4 From August 2002 a new zoning regime was introduced within the Park, wherein 12 percent of the Park area was designated as sanctuary zones, 54 percent as habitat protection zones, 0.1 percent as special purpose zones and 34 percent as a general use zone.

1.5 A key issue in interpreting the results is the degree to which the findings can be generalized. Again the above mentioned 2004 report described the means by which the data were collected, and generally speaking the same techniques were used in all three years (i.e. from 2002/3 to 2005). Teams of researchers were located at key populated areas which experience the greatest levels of visitation. These sites were Woolli, Minnie Waters, Diggers Camp/Village, Woolgoolga, Red Rock, Arrawarra/Mullaway, Emerald Beach, Coffs Harbour, Sapphire and Moonee, and more specifically at beaches, boat ramps, shelters and lifeguard stands. Data were collected during the week and over the weekends, primarily during the summer period. Appendix Two to this report contains a Table detailing survey points. It is assumed from data pertaining to sampling methodology that, given the unknown population, the sample is representative of those leisure users who populate the Park during the main recreational periods of the year. A second factor that reinforces this contention is that the sample characteristics for 2002/3 and 2005 are similar as detailed in the first section of this report. The sample for 2004 has about 40 percent of the numbers that comprise the other two surveys, and also tends to a 50:50 allocation between the sexes, implying that in this year a different approach was adopted. It became obvious in the analysis that the sample for this year possessed some characteristics different to those of the other two years, and these are highlighted in this report as they arise. There are no identified exogenous factors that can explain these differences, and they may arise because of the greater variability associated with smaller sample sizes. If this is the case one implication for future research of Park visitors is that a sample size of approximately 850 might be the required minimum sample size to properly assess the characteristics of sub-samples.

2.0 The nature of the samples – age and gender

2.1 The first step is therefore to assess to what degree the samples across the three periods of data collection are sufficiently homogenous to permit comparison between the years. Theoretically, if the data are not comparable then weights may have to be used to permit such comparison. The first variables used to check comparability were those of age and gender, and Tables One and Two present the

data. The first table presents the raw data, and indicates the totals for those who answered both questions about age and gender for the three years, 2002/3 to 2005. It can be seen that the data sizes vary, with, as already noted, the year 2004 having, in numbers of respondents, a sample size about 40 percent of that of the remaining two years.

Table One Sample Characteristics - Age and Gender

	Male 2002/3	Female 2002/3	Total 2002/3	Male 2004	Female 2004	Total 2004	Male 2005	Female 2005	Total 2005
14 to 17 years	15	7	22	8	7	15	27	32	59
18 to 24 years	48	26	74	17	20	37	38	29	67
25 to 34 years	75	41	116	20	31	51	66	68	134
35 to 44 years	149	118	267	55	57	112	139	109	248
45 to 54 years	121	54	175	45	31	76	120	65	185
55 to 64 years	46	18	64	16	9	25	47	21	68
65 + years	17	8	25	6	5	11	31	18	49
Total	471	272	743	167	160	327	468	342	810

2.2 Table Two attempts to provide a summary of the data by indicating the minimum and maximum percentages accounted for by each age group for both males and females. Close comparability of the samples is thus tested for by looking at the differences between the percentages for each age group for the entire survey period within each gender. It can be seen that the male respondents have quite similar age distributions between the different years, and it should also be noted that males account for about 58 percent of all respondents. In both 2002/3 and 2005 males account for about 60 percent of the sample, but in 2004 the division between the genders is approximately equal.

2.3 As might be expected, given the smaller number of respondents, variance is greatest within the female sample. As previously noted, Table Two presents the data in percentage terms and much of the variance can be explained by the

distribution of the 14 to 17 year age group; which age group however generally has the lowest number of respondents.

Table Two Percentage Distributions of Age Groups 2002-2005

	Males Min %	Male Max %	Females Min%	Females Max %
14 to 17 years	3.2	5.8	2.6	9.4
18 to 24 years	8.1	10.2	8.5	12.6
25 to 34 years	12.0	15.9	15.1	19.9
35 to 44 years	29.7	32.9	31.9	43.4
45 to 54 years	25.6	26.9	19.0	19.9
55 to 64 years	9.6	10.0	5.6	6.6
65 + years	3.6	6.6	2.9	5.3

2.4 To summarise the issue, when taking the sample as a whole, the level of variance within the overall sample due to gender and age distribution is comparatively small and the samples between the years may be treated as reasonably homogenous to permit comparisons when comparing totals. However, where gender and age become the subject of testing for difference, then it needs to be noted that a) for 2004 the gender distribution does not reflect that for 2002/3 and 2005, and b) the female age distribution for 2005 does not replicate the age distributions for 2002/3 and 2004. This will be noted within this report where it is thought statistically significant.

Table Three Profile of Visitors to the Park: Gender and Age – Aggregated Data

Ages	Male 2002-5	Female 2002-5	Total
14 to 17 years	50	46	96
18 to 24 years	103	75	178
25 to 34 years	161	140	301
35 to 44 years	343	284	627
45 to 54 years	286	150	436
55 to 64 years	109	48	157
65 + years	54	31	85
Total	1106	774	1880

2.5 Given the acceptable level of replication between the samples collected across the three years, it is possible to aggregate the samples to arrive at a profile of Park visitors. This is provided in Table Three. The most numerous age groups are those of 35 to 44 years of age accounting for one-third of all respondents, followed by those of 45 to 55 years of age (23.1 percent of the total) and those of 25 to 34 years (16.0 percent).

3.0 Nature of the samples – places of usual residence

3.1 A further means of analysis of the sample refers to the usual place of residence. Table Four provides details relating to the normal place of residence of the respondents. Again it can be noted that the data for 2004 differ slightly from those of 2002/3 and 2005, reflecting an apparent attempt it is suspected, to acquire a weighted sample that reflected an equal number of males and females; which gender balance does not seemingly reflect the actual pattern of usage within the park. The differences are not, however, statistically significant, thereby legitimately permitting the State of usual residence to be used as a discriminatory variable in later analysis, if required.

Table Four The Normal Places of Residence of Respondents (by States)

	Frequency 2003	Percent 2003	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
ACT	2	0.3	7	2.2	9	1.4
Northern Territory	0	0	2	0.6	5	0.8
New South Wales	604	82.0	246	77.6	554	83.7
Victoria	30	4.1	16	5.0	13	2.0
Queensland	91	12.3	44	13.9	74	11.2
Western Australia	10	1.4	2	0.6	5	0.8
Total	737	100	317	100	662	100

3.2 Over the three year period, it becomes apparent that New South Wales provided 1,404 respondents, accounting for approximately 80 percent of all Australian respondents.

3.3 In terms of all visitors from overseas, in each of the three samples international visitors accounted for about 3.0 percent of all visitors, and as shown in Table Five, accounted for but 3.4 percent of the grand total of all respondents.

Table Five**The Numbers of Overseas Visitors**

Country	Frequency 2003	Frequency 2004	Frequency 2005	Grand Total
Australian Visitors	872	373	819	2064
Canada	1	0	4	5
France	2	0	0	2
Germany	2	2	3	7
Holland	3	0	0	3
Iceland	0	0	1	1
Ireland	0	2	0	2
Italy	0	2	1	3
Mexico	0	0	1	1
Netherlands	2	0	2	4
New Zealand	0	0	2	2
Norway	3	0	0	3
Singapore	0	1	0	1
South Africa	1	0	1	2
Sweden	0	0	1	1
Switzerland	0	1	1	2
UK	8	5	12	25
USA	4	1	1	6
Zimbabwe	0	0	1	1
Total	899	388	850	2137

4.0 Nature of the sample – drive time zones for Australian residents

4.1 The 2004 report indicated that significant numbers of Australians visiting the Park reside in a two hour drive zone from the Park, the data being based on the post codes provided by respondents. This was again analysed for all three sets of data as shown in Table Six. The percentage that is reported in bold font is the proportion of residents who indicated a postal code identified as being within an estimated two hour drive time of the Park. It is calculated as a percentage of all respondents who provided either a postal code or identified an overseas country within which they normally reside. It was reported in 2004 report that place of normal residence was a key determinant of activities and accommodation used, and for this reason a similar analysis was repeated.

Table Six Place of Residence and Drive Time Zones from the Park

Drive Zone	2003		2004		2005	
	No.	%	No.	%	No.	%
Living within a 2 hour drive zone	376	49.2	128	38.5	335	48.3
Living outside a 2 hour drive zone	362		190		327	
International Visitors	26		14		31	
Missing data	106		25		101	

4.2 The larger samples of 2002/3 and 2005 concur in indicating that just under half for whom there is information live within a two hour drive time of the Park. It has already been noted that in 2004 there was at least one discrepancy when compared to the other two samples, which is the split between the genders. In this instance this particular sample reveals that about 60 percent of visitors came from beyond a drive time zone of 2 hours from the Park.

5.0 Nature of the sample – composition of visitor groups

5.1 Table Seven indicates the self identified categories of the groups visiting the Park in each of the three years. In each of the years about 70 percent of the groups are categorized as comprising family and friends, and variance between the years can, it is suspected, be explained by variations in categorization of groups that are composed of both friends and family members. Of more significance in terms of potential behaviours and length of stay in the Park might be the composition of the group members by age and group size.

Table Seven Composition of the Groups

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Family	481	63.0	89	37.6	178	46.7
Friends	124	16.3	81	34.2	126	33.1
Couple	76	10.0	33	13.9	25	6.5
Self	62	8.1	17	7.2	37	9.7
Other	20	2.6	13	5.5	14	3.6
Total	763		237		381	
Missing	86		148		459	
Total	849		384		847	

5.2 Table Eight presents two ways of calculating the average group sizes. The first two rows provide the average numbers of adults and children based on the calculation of size of party divided by the numbers of parties involved. However the range of party sizes is quite considerable. For example in 2005 the sizes of parties ranged from 1 to 10 adults and from 0 to 7 children, whereas in 2002/3 some parties were even larger and included one party of 32 children, which is thought to be a class group or some similar outing. The average score can be affected by such extremes and thus the trimmed mean statistics is also provided. This calculation excludes the top and bottom 2.5 percent of all respondents in an attempt to exclude the exceptionally large and small party sizes.

Table Eight **Average Group Sizes**

Mean numbers of group members	2002/3	2004	2005
Adults	3.64	3.74	2.98
Children	3.44	1.99	2.43
Adults (trimmed mean)	3.07	3.46	2.84
Children (trimmed mean)	2.66	1.84	2.28

5.3 Another means of presenting the data is simply to indicate the numbers of adults that comprised a given size of party. This approximates to indicating a modal norm, that is, while the mean average is over three people, the high numbers associated with larger groups effectively results in the average figure hiding the fact that half the user groups are but one or two adult individuals, albeit at times accompanied by children. These data are shown in Table Nine and Appendix Three. Across the three years groups of three or less adults composed between a half and two-thirds of all adult parties, alternatively it might be said that groups larger than this account for a third to half of all such groups. The conclusion from these figures is that the Park is absorbing quite large group sizes of people and that while many are not seeking solitary experiences perhaps as many as a quarter of visitors are seeking such an experience.

Table Nine Percentage of All Parties Accounted for by Small Groups

Numbers of parties comprising	2002/3		2004		2005	
	No.	%	No.	%	No.	%
One Adult	106	13.8	38	12.8	55	24.6
Two Adults	313	40.8	71	23.9	66	29.5
Three Adults	95	12.4	37	12.5	28	12.5
	514	67.0	146	49.2	149	66.5

- 5.4 Appendix Three provides a full table showing the age and gender of those accompanying the respondents for each of the three collection periods involved. The data permits such details for up to three companions. For the first companion, consistently across the sample, just over 50 percent of the sample is accompanied by some-one between the ages of 35 to 54 years, while those under the age of 24 years account for about one-fifth of the sample. There is, however, a break between 2002-2004 on the one hand and the data for 2005. In the two prior years the majority of these are between the ages of 18 to 24 years, whereas for 2005 there is a more equal split between those aged 14 to 17 years and those aged 18 to 24 years.
- 5.5 With reference to the ages of the second and third companions, the presence of those under the age of 24 years becomes more pronounced with this age group accounting for about 40 percent of those identified, regardless of gender. Those between the ages of 25 to 54 years make up the great majority of the remaining visitors.
- 5.6 With reference to gender in 2002/3, of the 1,300 companions identified, 44 percent were male. In 2004, of the 523 respondents, 56 percent were male and in 2005 of the 1,083, 43 percent were male. It has been previously commented that the 2004 sample possesses some differences from the larger samples of the years 2002/3 and 2005 and in consequence, again, the two larger samples are being interpreted as being more representative.

5.7 Overall, it emerges that some small changes can be discerned in group composition between the years 2002/3 and 2005 within a fairly consistent theme. The major theme appears that about two-thirds of those visiting the Park comprise groups of three adults. Of these adults, in 2002/3 and 2004 about 40 to 45 percent were unaccompanied by children under the age of 14 years, but in 2004 this figure increases to about 80 percent. One factor thought possible to partially explain this was the ageing of children of those who live within the 2 hour drive zone. As these heavy users of the Park grow older, so too do their children, and hence the demographic profile of Park users might reflect this. Accordingly the data were examined to assess this possibility. No evidence emerged to support this hypothesis.

6.0 The activities undertaken by visitors – accommodation used

6.1 Table Ten provides details on the accommodation used by the visitors with reference to the commercial sector and homes other than one's own. A difference in the codings provided to the author did not permit a wholly consistent pattern of statistics across the three years meaning that the use of the respondents' own home had to be excluded from the analysis. However, as is to be expected, the use of categories other than one's own home by those living within the 2 hour drive zone of the Park was significantly less than those who lived beyond this zone. What was also possible was to establish the degree of consistency of use of the different types of commercial accommodation across the years by the two market segments based on drive time.

6.2 From Table Ten it becomes possible to conclude that for those Australians arriving from outside of the 2 hour drive zone, staying with relatives accounts for about 14 to 17 percent of the accommodation used, while staying with friends accounts for a further 7 percent or so – meaning that about a quarter of these visitors are not using the commercial accommodation sector.

Table Ten**Activities of Visitors – Main Accommodation Used**

	Outside 2 hour drive time 2002/3		Within 2 hour drive time 2002/3		Outside 2 hour drive time 2004		Within 2 hour drive time 2004		Outside 2 hour drive time 2005		Within 2 hour drive time 2005	
	No.	%	No	%	No	%	No	%	No	%	No	%
With friends	21	6.1	8	5.6	14	7.7	7	10.9	28	9.3	8	6.3
With relatives	56	16.4	18	12.7	31	17.2	10	15.6	43	14.3	5	3.9
Motel	18	5.3	2	1.4	8	4.4	5	7.8	16	5.3	2	1.6
Hotel	11	3.2	2	1.4	6	3.3	0	0.0	13	4.3	0	0.0
Caravan park	99	29.1	59	41.8	69	38.3	20	31.2	107	35.6	74	58.7
Holiday cabin	9	0.8	5	2.0	6	3.3	3	4.6	3	1.0	1	0.8
Boat / yacht	3	0.1	0	0.0	2	1.1	1	1.5	2	0.7	0	0.0
Holiday Unit / house	104	30.6	34	24.1	35	19.4	14	21.8	81	27.0	32	25.4
NPWS Camp Ground	19	5.6	13	9.2	8	4.4	4	6.2	7	2.3	4	3.1
Own House			182									
	340	100.0	323		179		64		300		126	

Note – percentage is calculated on total for which there is information in each year – rounding up means total do not equal 100.0 percent exactly. Own house was not coded for 2004-5 and hence percentages for those years not wholly compatible with 2002/3 and hence this category is excluded in calculating percentages for within 2 hour drive zone.

6.3 Within the commercial sector the hotel/motel sector accounts for about 10 percent of the market. Most of ‘out of two hours drive zone’ visitors are using caravan parks and holiday homes/units of some description. These two accommodation groups are more or less evenly divided and account in total for about 30 percent each, that is, 60 percent in total. The sector described as holiday home/unit is ambiguous in that it is unclear whether these are rental properties or owned by the visitors, and changes to the questionnaire for use in 2006 will seek to make the distinction clearer.

6.4 Those living within the 2 hour drive zone are also heavy users of caravan parks, which account for about 50 percent of the non-home use made by this market segment. However, although bedeviled by missing data and a lack of specificity, the implication of the dataset is that this sector is primarily driving to the Park from their own homes, and that about two-thirds of the group do not use any other accommodation beside their home, and of the remaining one-third, as noted, about

half use caravan parks. Of the remaining respondents living within a two hour drive time, holiday home/units account for much of the accommodation usage, and again some of this may be second holiday home owned units. Indeed, local people may not only own such units but engage in both using themselves for some part of the summer while renting them for other parts of the year. It is to be hoped that a new questionnaire format may unravel this issue a little further.

6.5 In summary therefore, a quarter of visitors living outside a 2 hour drive zone do not use the commercial accommodation sector. Of the remaining such visitors, 60 percent use caravan parks and holiday homes. These two categories of commercial accommodation are also important in that one-third of the sample who both reside in the 2 hour drive zone *and* who use accommodation other than their home. However, one ambiguous factor is the ownership of holiday homes. It is not known whether these are owned or rented holiday units.

7.0 Activities of Visitors – Places Visited

7.1 In each of the three years the location most patronized was the beach, with in 2002/3 and 2005 about three-quarters of respondents spending most of their time there. The second most popular area was the estuary, with between about 15 to just fewer than 20 percent of respondents nominating this as the area where they spend most time. The data are shown in Table Eleven.

Table Eleven Areas (by Geographical Feature) in Which Most Time is Spent

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Beach	597	76.8	261	68.0	622	74.5
Islands	18	2.3	4	1.0	18	2.2
Offshore	16	2.1	23	6.0	21	2.5
Headland / rocky shore	19	2.4	16	4.2	7	.8
Estuary	117	15.1	73	19.0	156	18.7
Other	10	1.3	7	1.8	11	1.3
Total	777	100.0	384	100	835	100.0

7.2 The next step was to aggregate the selections made when respondents nominated the locations in which they spent the second and third most periods of time. Table Twelve thus shows the total arrived at by aggregating the responses made to the questions relating to first, second and third areas of usage.

Table Twelve Aggregated Area Usage (by Geographical Feature)

Location	2002/3		2004		2005	
	No.	%	No.	%	No.	%
Beach	270	36.8	301	51.1	692	58.3
Islands	26	3.5	17	2.8	28	2.3
Offshore	60	8.1	54	9.1	49	4.1
Headland/rocky shore	129	17.6	86	14.6	107	9.2
Estuary	223	30.4	122	20.7	277	23.3
Other places	25	3.4	9	1.6	33	2.7
Total	733		589		1186	

7.3 Across the years two locations account for approximately 70 percent of places visited, and these are the beach (accounting for about 50 percent of all visits since 2004) and the estuary (accounting for a fifth of visits in 2004 and 2005 and a third of all visits in 2002/3). The third most visited location is that of the headland and rocky shore, but this seems to possess a declining share.

7.4 It was hypothesized that local people might have a slightly different pattern of usage because of easier access to the Park and its beaches. Tables were constructed for each year for the first to third most popular areas visited. The results indicated that there were comparatively few differences and none at statistically significant levels and the conclusion was drawn that, for the three periods studied, there was no significant difference in usage of the Park by local visitors (defined as living within a two hour drive zone) and other such visitors. An analysis by usual State or Territory of residence also showed no statistically significant difference. It implies that the nature of the Park and the recreational opportunities it provides have an equal appeal to all visitors regardless of origin of visitors' trips.

7.5 The next analysis undertaken was to assess visitation by named area, and Table Thirteen presents those results of identified locations that attracted a total of at least 10 respondents in each of the three periods. Two conclusions can be immediately drawn from the table. First, visitors are generally dispersed over quite a number of different locations, but second some ‘honey pot’ areas do exist. Woolgoolga and Wooli each accounted for about 10 percent of the identified locations and together account for a fifth of all locations visited. Minnie Water and Moonee Beach and water areas are but marginally behind and these four areas in total just fall short of accounting for 40 percent of the places visited. Arrawarra and Diggers each account for just fewer than 7 percent of the places identified by respondents. Consequently, over the three years just six locations account for almost half of the places mentioned by respondents.

Note: Some survey respondents did not distinguish between Diggers Camp or Diggers Beach when referring to “Diggers”, therefore, reference to “Diggers” in this report includes both Diggers Beach and Diggers Camp, even though they are entirely different places

Table Thirteen Most Commonly Visited Areas by Name (Aggregate Data)

	2003 No.	2003 %	2004 No.	2004 %	2005 No.	2005 %	Total No	Total %
Arrawarra	44	5.7	17	4.2	62	7.2	123	6.0
Coffs Harbour/ creek/jetty	11	1.4	12	3.0	11	1.3	34	1.7
Corindi River	7	.8	2	0.5	2	0.2	11	0.5
Diggers Beach/Camp	66	8.4	15	3.7	59	6.8	140	6.8
Emerald	6	.8	42	10.4	0	0	48	2.3
Illaroo	4	.5	6	1.5	0	0	10	0.5
Jetty	6	.8	0	0	13	1.5	19	0.9
Minnie Water/Beach	94	12.1	39	9.7	66	7.6	199	9.7
Moonee Beach/Creek	56	7.2	41	10.2	70	8.1	167	8.2
Muttonbird Is.	7	.9	12	3.0	0	0	19	0.9
Park Beach	37	4.8	0	0	61	7.0	98	4.8
Red Rock	17	2.1	40	9.9	36	4.2	93	4.5
Woolgoolga	79	10.1	59	14.6	66	7.6	204	10.0
Wooli (River, Beach)	86	11.1	35	8.7	89	10.3	210	10.3
Total	777	100.0	403	100	867	100	2047	100

Note Totals own are the total of all nominated places including those not shown in the Table.

7.6 It was noted that the data for years 2002/3 and 2005 closely resemble each other and in fact the Pearson Coefficient of Correlation between the two was estimated at 0.91, implying a high correlation between the two sets of data. It is again evident that 2004 deviates from the other two years, as in other aspects of that year's survey. Nonetheless, an examination of the data indicates that the broad conclusions reached in paragraph 7.5 for the total numbers of respondents are not unduly negatively affected, primarily because the samples for 2002/3 and 2005 are so much larger than that for 2004.

8.0 Activities of visitors – length of stay in the Park

8.1 Table Fourteen provides an analysis of the time spent in the Park. In 2002/3 approximately 40 percent of respondents spent less than 6 hours in the Park, whereas in 2005 that figure had climbed to just over 68 percent. Again the 2004 sample appears inconsistent with the other two years. In terms of longer stay visitors, in 2002/3 about 9 percent stayed over a month as against 2 percent in 2005.

8.2 The average duration of stay for the three years is calculated as being, in 2002/3, 149 hours (6.2 days), in 2004, 230 hours (9.6 days) and in 2005, 50 hours (2.1 days). Using a trimmed mean calculation to avoid the influence of extreme values, the respective values are 4.8 days in 2002/3, 7.7 days in 2004 and 1.2 days in 2005. The modes for each of the three years are 3 hours for 2002/3, 14 days for 2004, and 2 hours for 2005. The median value for 2002/3 is 7 days and 3 hours for 2005.

Table Fourteen Time Spent in the Park

	Number 2002/3	Percent 2002/3	Number 2004	Percent 2004	Number 2005	Percent 2005
Missing data	126		95		97	
2 or less hours	122	18.7	22	7.1	303	39.4
2 to 6 hours	152	23.3	43	14.0	226	29.4
6 to 24 hours	61	9.4	25	8.1	88	11.4
1 to 2 days	31	4.8	12	3.9	21	2.7
3 to 4 days	45	6.9	23	7.5	18	2.3
5 to 7 days	23	3.5	10	3.2	10	1.3
1 to 2 weeks	67	10.3	76	24.7	54	7.0
2 to 4 weeks	90	13.8	59	19.2	32	4.2
1 to 2 months	53	8.1	36	11.7	16	2.1
more than 2 months	7	1.1	2	0.6	1	0.1
Total	777	100.0	384	100.0	867	100

Note: Percentages calculated on the numbers who actually responded to the question and provided information.

Table Fifteen Time Spent in the Park by Most Visited Area

Year 2002/3

Time Spent in the Park	Area most spent in						Total
	Beach	Islands	Offshore	Headland/ rocky shore	Estuary	Other	
Less than 2 hours	104	6	0	2	10	0	122
From 2 to 6 hours	118	1	4	1	27	1	152
From 6 to 24 hours	37	1	1	4	17	1	61
From 1 to 2 days	24	0	1	3	3	0	31
From 3 to 4 days	33	4	1	0	6	0	44
From 5 to 7 days	13	1	1	4	3	1	23
From 1 to 2 weeks	53	0	4	1	9	0	67
From 3 to 4 weeks	73	2	0	1	13	0	89
From 1 to 2 months	36	1	2	1	13	0	53
Over 2 months	6	0	0	0	1	0	7
Total	497	16	14	17	102	3	649

Year 2004

Time Spent in the Park	Area most spent in						Total
	Beach	Islands	Offshore	Headland/ rocky shore	Estuary	Other	
Less than 2 hours	12	0	4	3	3	0	22
From 2 to 6 hours	19	1	6	2	15	0	43
From 6 to 24 hours	13	0	1	3	8	0	25
From 1 to 2 days	9	0	0	0	2	0	11
From 3 to 4 days	16	0	0	2	3	2	23
From 5 to 7 days	9	1	0	0	0	0	10
From 1 to 2 weeks	57	1	2	0	15	0	75
From 2 to 4 weeks	48	0	3	0	8	0	59
From 1 to 2 months	25	0	0	1	10	0	36
Over 2 months	1	0	0	0	1	0	2
Total	209	3	16	11	65	2	306

Year 2005

Time spent in the Park	Area most spent in						Total
	Beach	Islands	Offshore	Headland/ rocky shore	Estuary	Other	
2 or less hours	240	0	2	4	51	3	300
From 2 to 6 hours	152	3	9	1	58	2	225
From 6 to 24 hours	72	0	2	1	12	0	87
From 1 to 2 days	12	6	1	0	1	0	20
From 3 to 4 days	11	1	2	0	4	0	18
From 5 to 7 days	6	1	0	0	0	3	10
From 1 to 2 weeks	38	1	2	1	11	1	54
From 2 to 4 weeks	24	2	1	0	5	0	32
From 1 to 2 months	8	1	0	0	6	0	15
Over 2 months	1	0	0	0	0	0	1
Total	564	15	19	7	148	9	762

- 8.3 Setting aside the data for 2004 it does appear that the length of average stay in the Park has declined, but it can be commented that the base year of 2002/3 may be atypical in terms of broader tourism trends. In the aftermath of September 11th 2001, the SARS outbreak in South East Asia and the Bali Bombing of 2003, Australian domestic tourism enjoyed some of the best levels of domestic holidaying for several years, but by the commencement of 2005 outgoing Australian tourism had begun to re-establish its popularity. Given this, it might be expected that destination switching might account, at least in part, to some diminution of the average stay in the Park.
- 8.4 In the report for 2002/3 it was noted that shorter stay visitors tended to primarily patronize the beach. Table Fifteen replicates an analysis of length of stay by the area in which respondents spent most time. It can be seen that of those staying in the Park for less than 6 hours, in 2002/3, 81 percent spent time primarily on the beach. The respective figures for 2004 and 2005 were 47 percent and 75 percent in 2005. It should be noted that again the 2004 results are contrary to those of the other two years. The data also show that the beach continues to be the most popular primary location for longer stay visitors, but it can be noted that the longer stay visitors tend to utilize the estuary more.
- 8.5 Again, to summarise, there is evidence to suggest that over the years the average length of stay has diminished, and the percentage staying for more than one month has also fallen. In 2005, 60 percent of respondents supplying data stayed for less than 6 hours, much higher than in previous years, including 2002/3. The data were examined to assess the implication of time zones, in that it could be argued that visitors from outside the 2 hour drive zone who might be expected to stay longer per day, but fewer days, might have an over-riding impact on these data. Such analysis showed that while there are statistically significant differences in length of time spent at the Park at $p < 0.001$, and that those from beyond a 2 hour drive zone spend longer in the Park (in 2005 almost twice as long as those living within the 2 hour drive zone), between 2002/3 and 2005 both groups had reduced the mean length of stay by about at least 50 percent.

9.0 Physical activities undertaken by visitors

9.1 Table Sixteen provides an analysis of the nominated first main activity by respondents in each of the three time periods. In each case swimming was the major activity, being listed by about a third to almost half the sample in each year. Surfing was the second most popular activity. Together these two activities account for about 70 percent of all the physical activities mentioned.

Table Sixteen Nominated First Main Activity

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Surfing	261	33.6	107	27.9	226	26.1
Scuba diving	18	2.3	6	1.6	25	2.9
Swimming	379	48.8	130	33.9	382	44.1
Canoeing	3	0.4	9	2.3	3	.3
Fishing	33	4.2	36	9.4	35	4.0
Spear fishing	4	0.5	10	2.6	2	.2
Boating	7	0.9	16	4.2	18	2.1
Sailing	0	0	0	0	3	.3
Sight seeing	17	2.2	19	4.9	22	2.5
Walking	36	4.6	6	1.6	49	5.7
Snorkeling	6	0.8	28	7.3	11	1.3
4WDing	2	0.3	2	0.5	1	.1
Pet exercising	10	1.3	6	1.6	23	2.7
Other	0	0	2	0.5	30	3.5
Total	776	99.9	377	98.2	830	95.7
Missing data	1	0.1	7	1.8	37	4.3
Total	777	100.0	384	100.0	867	100.0

9.2 Respondents were asked to nominate not only the primary, but also the second and third most usual activity in which they engaged, and Table Seventeen produces an aggregate listing from all three lists.

9.3 The table indicates that about a third of the total sample go swimming while for the second most mentioned activity, walking, there are 858 mentions and surfing is third with 746 listings. These three activities account for about two-thirds of all the activities mentioned. Among the 'minority' activities, fishing is the most frequently mentioned and accounts for about 10 percent of the activities.

Respondents were also asked to identify any other activity in which they participated, and these data helped to develop Table Eighteen. This portrays a range of activities that include the traditional sandcastle building to reading, just relaxing, sleeping, sun bathing, nude swimming and sports and games, including playing with children. For the greater part they are relaxations of one kind or another, indicating the importance of the Park for users as a source of pleasure and relief from daily work lives.

Table Seventeen All Activities by Year

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Surfing	338	16.9	141	14.5	267	14.6
Scuba diving	23	1.2	10	1.0	39	2.1
Swimming	622	31.1	284	29.2	622	33.9
Canoeing	23	1.2	29	3.0	26	1.4
Fishing	197	9.9	116	11.9	175	9.5
Spear fishing	17	0.8	11	1.1	11	0.6
Boating	40	2.0	32	3.3	48	2.6
Sailing	6	0.3	3	0.3	4	0.2
Sight seeing	123	6.2	93	9.5	100	5.4
Walking	381	19.1	162	16.6	315	17.2
Snorkeling	73	3.7	43	4.4	61	3.3
4WDing	29	1.5	20	2.1	13	0.7
Pet exercising	52	2.6	15	1.5	42	2.3
Other	73	3.6	15	1.5	111	6.1
Total	1997	100.0	974	100.0	1834	100.0

9.4 The data were analysed to assess whether any relationship existed between the place of origin of the visitors and the type of activity undertaken, but no statistically significant relationship was found. The implication is that the Park performs a similar recreational activity function for all visitors, regardless of where they come from.

Table Eighteen

Other Activities Undertaken

	Frequency 2003	Frequency 2004	Frequency 2005
4WD	4		1
BBQ	1		2
Baby sitting			3
Bike riding	1		
Bird watching			3
Board riding/body boarding	2		1
Boating	2		1
Building sandcastles	11		4
Camping			1
Canoeing	2		1
Conference/Meeting	2		
Cricket	2		
Cruise	1		
Cycling	3		4
Drinking	4	1	
Driving on bus	1		
Eating/Lunching	4		15
Fishing	11		13
Games	1		
Golf			1
Hanging out on the rocks	1		
Jet skiing			1
Kayaking	1	3	1
Kite flying	2		
Leisure	2		
Life guard/surf rescue	1		2
Nipper training	4		
Nude bathing	1		
Paddling	2		
Parasailing	2		
Photography	1	1	
Picnic	2	1	11
Playing/ (including with kids)	4	2	3
Reading	2	2	9
Relaxing	4	7	49
Riding	1		
Running/exercise	3		10
Sailboarding/windsurfing			1
Shopping	1		1
Sight seeing	5	1	6
Sleeping	0	1	2
Snorkeling	4		6
Sun baking/sun bathing/tanning	9	1	20
Surfing	2		
Swimming	9		
Walking	18	4	15
Total	52	24	187

- 9.5 Again the data were analysed to assess what relationships existed between duration of stay and actual activities undertaken. Each year will be compared in turn. In 2002/3, 45 percent of those going swimming stayed in the Park for less than 6 hours, whereas only 6 of this group listed boating as an activity. On the other hand 17 of those going boating stayed longer than 5 days, which group represented 50 percent of those boating. Similarly only 3 of the 14 going canoeing indicated that they had a stay of less than 6 hours. Again, only 3 of the 25 who indicated that they had been four wheel driving stayed less than 6 hours. In short, for some activities that require time and capital equipment there was a relationship between duration of stay and activity, with the more accessible activities like swimming and similar beach related activities being adopted at statistically significantly levels by short-stay visitors.
- 9.6 In 2004, 55 out of a total of 91 (60 percent) respondents who identified fishing as one of their 3 main activities stayed in the Park for more than one week. Of the 235 who went swimming 155 or 65 percent stayed in the Park for more than one week. Similarly of those boating, (23 in number) 65 percent stayed for more than one week. In short, for 2004, there seemed to be little relationship between patterns of activity selected and duration of stay. Again, it needs to be pointed out that the sample for this year was smaller and has been found to differ from the remaining years of 2002/3 and 2005.
- 9.7 Indeed, the year 2005 once again tends to replicate the data for 2003, subject to a caveat. In this year 45 percent of those going swimming stayed in the Park for less than 6 hours. Of those boating, 47 percent stayed in the Park for more than 6 hours. However, unlike 2002/3, 80 percent (8 out of 10) of four wheel drivers stayed in the Park for less than 6 hours. However, approximately 50 percent of the boating enthusiasts stayed for longer than 6 hours, with most of these staying over 2 days. Of those going fishing, 45 percent stayed longer than 6 hours. In short, the patterns of 2005 tend to be similar to those of 2002/3, but modified by the tendency to a shorter mean stay in the Park in 2005 when compared to 2002/3.

10.0 Gender differences and activities

10.1 Data were subjected to chi-squared tests. For example, in 2005, females were more likely to identify swimming as their first main activity than males. Looking at the overall counts for swimming, there remained in 2005 a tendency for more females than males to go swimming, but not at statistically significant levels. With reference to surfing, in 2005, both genders had similar levels of activity. The same was also true of fishing. These data differed from those of 2002/3 when 38 percent of males went surfing compared to 26 percent of females. In 2005, about 25 percent of both genders went surfing. Similarly in 2002/3 statistically significant differences existed between the genders for fishing, where 144 males mentioned fishing compared to 48 females. In 2002/3 it was noted that more females than males made reference to walking as an activity, and this remained true in 2005, albeit not to quite the same degree. This too might be due to the slighter shorter duration of holidays in the Park in 2005.

10.2 In 2004 the difference between males and females with reference to swimming was confirmed, with females being significantly more likely to go swimming. The data for surfing is that there is little difference between the genders. In this year males were more likely to mention fishing as an activity compared to females. On the other hand females were likely to include walking as one of their three main activities.

10.3 To summarise these data, it is suggested that females are more likely go swimming and walking than their male counterparts. Surfing tends to attract both genders equally, but inequalities exist in the prioritization of surfing as a major or secondary activity when males outnumbered females as indicating it was a primary activity. On the other hand, males will tend to be more likely mention fishing than females.

11.0 Fishing activities

11.1 Data were collected in each of the years for main and secondary types of fishing. The data are shown in Tables Nineteen and Twenty. These show that estuary

fishing accounts for about 40 percent of the main type of fishing that respondents undertake. Fishing from the beach accounts for about a quarter of fishing activities. Thus these two types of fishing account for about 65 to 70 percent of all fishing activities.

Table Nineteen Main Types of Fishing

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Beach	45	25.1	32	28.1	53	29.4
Rock fishing	20	11.2	8	7.0	11	6.1
Bottom	23	12.8	19	16.7	13	7.2
Trolling	2	1.1	7	6.1	5	2.8
Estuary	73	40.8	45	39.5	80	44.4
Game fishing	2	1.1	1	0.9	9	5.0
Trapping	4	2.2	1	0.9	2	1.1
Fly fishing	2	1.1	0	0	1	0.6
Other	8	4.7	1	0.9	6	3.3
Total	179		114		180	

11.2 In 2004 it can be noted that the types of secondary fishing mentioned were few in number, but equally while more secondary fishing types are listed in 2002/3 and 2005, in total these listings were equivalent to about 18 percent of the types mentioned as primary fishing occasions. This implies that many of those fishing tend to adhere to just the one type of fishing.

Table Twenty Secondary Type of Fishing

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Beach	15	38.4			2	5.4
Rock fishing	4	10.2	2	40.0	7	18.9
Bottom	4	10.2			5	13.5
Trolling	2	5.1	1	20.0	6	16.2
Estuary	3	7.7	2	40.0	10	27.0
game fishing	2	5.1				
Reef fishing	2	5.1				
off jetty	1	2.6				
spear fishing	4	10.2			1	2.7
sea fishing	2	5.1				
					6	16.2
Total	39		5		37	

12.0 Duration of time spent fishing

12.1 In 2005, 155 of those who went fishing indicated the length of time they spent in this pursuit. The mean time spent fishing was 2.6 hours. In 2002/3 and 2004 the mean time was 2.99 hours (n=155) and 2.87 hours (n=95) respectively.

13.0 Target Fish Sought

13.1 For each of the three years the main target fish sought were estuary fish (accounting for well over half of responses), with beach fish being the second and reef fish the third. Over the period estuary fish seem to have become more popular as a target group while beach fish have declined. Reef fish seems have been fairly consistent. The fourth group is pelagic, but while this has increased from 2.3 to 6.3 percent between 2002/3 and 2005, the 2005 figure represents a decline on the previous year. However, as noted previously, the 2004 sample is somewhat problematic in some regards.

Table Twenty-one Target Fish Sought

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Reef	26	15.1	17	17.2	20	12.5
Beach	46	26.7	20	20.2	26	16.3
Estuary	96	55.8	50	50.5	104	65.0
Pelagic	4	2.3	12	12.1	10	6.3
Total	172	100.0	99	100.0	160	100.0

13.2 Respondents were asked to identify the actual fish for which they were fishing and were given the opportunity to name up to 5 species. Table Twenty-two provides aggregate totals for all five choices. It would appear that bream and flathead each consistently account for just under a fifth of all targeted fish, and together account for about 37 percent of all fish sought. The data also indicate a growing popularity in whiting, which came from third to first in the Table. These three species together account for just over 60 percent of the sought species. Of the remaining fish species, snapper accounts for about 8 to 10 percent of the total. Altogether 17 different species (with the addition of beach worms, 18) were

identified, and thus it appears that of these about 14 are of comparatively little interest to recreational fishers.

Table Twenty-two Species of Fish Sought

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Beach Worms	7	5.0	1	1.2	2	1.5
Bill Fish	0	0	0	0	1	0.7
Blue Groper	2	1.4	2	2.4	0	0
Bream	25	17.8	16	19.5	31	19.5
Flathead	26	18.6	15	18.3	30	18.3
Kingfish	1	0.7	3	3.7	1	0.7
Luderick	4	2.9	3	3.7	4	2.9
Mackerel	1	0.7	2	2.4	2	1.5
Mangrove Jack	4	2.9	4	4.9	4	2.9
Morwong	8	5.7	2	2.4	0	0
Mulloway	3	2.1	1	1.2	1	0.7
Mud Crabs	7	5.0	3	3.7	1	0.7
Pearl Perch	4	2.9	2	2.4	5	3.6
Snapper	15	10.7	6	7.3	12	8.7
Tailor	6	4.3	0	0	4	2.9
Tuna	1	0.7	0	0	1	0.7
Tuskfish	5	3.6	2	2.4	1	0.7
Whiting	21	15.0	20	24.4	37	27.0
Total	140	100.0	82	100.0	137	100.0

13.3 In 2005 the mean catch was 4 fish with an average weight of 6.39 kilograms. The numbers of fish caught ranged from none to a maximum of 20, with the heaviest fish claimed to be 80 kilograms. The total weight and number of fish caught were 358 kilos and 338. However, only 80 fishers reported the numbers caught and 56 the weight of the fish, of whom some reported that their fish weighed nothing. These 2005 data compare with average catches of 4.5 fish in 2004 with an average weight of 6.9 kilos. In 2002/3 the respective figures were 4.5 and 3.5 kilos. The data therefore suggest fairly consistent catches in terms of numbers of fish, and in the last two years a consistent weight. However, it should be noted that in all three time periods a significant number of those stating they had been fishing did not provide information. It was found in Table Seventeen that in 2002/3 and 2005 that 170 had indicated that they had been fishing. The data relating to catch numbers and weights comes from less than half this number.

13.4 Information was also sought as to which type of boat was used and whether it had GPS. In 2002/3, 89 recreational fishers indicated that they had used a boat, of which 79 were private (of which a third had GPS) and 10 were chartered (of which 3 were thought to have GPS). Similar data for 2004 and 2005 are provided in Table Twenty-three. Overall it can be seen that in about one-third of the trips recorded were in boats fitted with GPS. However, it should not automatically be concluded that one-third of all boats had GPS as the data relates to fishing trip patterns and there are no data as to frequency of trips. It might be that those boats fitted with GPS were used more, or less frequently than others.

Table Twenty-three Boats Used by Recreational Fishers

Was GPS used?	2002/3 Private	2002/3 Charter	2004 Private	2004 Charter	2005 Private	2005 Charter	Total
Yes	24	3	15	2	32	1	77
No	55	7	25	3	45	8	143
Total	79	10	40	5	77	9	220

Of the charter boats the Blue Wing and Wooli Deep Sea Tours were identified as having GPS in all three periods, and Dive Quest, Jetty Dive, Wooli Dive and Southern Comfort were identified in 2005 as possessing GPS. This is not to say that other operators did not possess GPS – it only states that these were the perceptions of respondents. Appendix Five comprises a list of GPS models used.

14.0 Knowledge of the Solitary Island Marine Park

14.1 Table Twenty-four illustrates the finding that approximately 70 percent of all respondents across the three periods of data collection knew of the existence of the Solitary Island Marine Park in the area. It was thought that residents of New South Wales and those living within the two hour drive zone would be more knowledgeable about the Park's existence than those from further away, and this hypothesis was tested with the results shown in Tables Twenty-five and Twenty-six.

Table Twenty-four Knowledge that Solitary Islands Marine Park is in this Area

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Yes	608	78.2	280	72.9	628	74.1
No	169	21.8	104	27.1	219	25.9
Total	777	100.0	384	100.0	847	100.0

Table Twenty Five Knowledge of the Solitary Islands Marine Park by Drive Zone

Time zone	Did you know the Solitary Island Marine Park is in this area?					
	Yes 2002/3	No 2002/3	Yes 2004	No 2004	Yes 2005	No 2005
Outside 2 hour drive zone	208	106	128	62	211	117
Within 2 hour drive zone	297	36	109	19	285	50
Total	515	142	237	81	496	167

Table Twenty Six Knowledge of the Solitary Islands Marine Park by State

STATE	Did you know the Solitary Island Marine Park is in this area?					
	Yes 2002/3	No 2002/3	Yes 2004	No 2004	Yes 2005	No 2005
NSW	525	117	184	62	416	138
ACT	1	0	5	2	8	1
VIC	10	13	11	5	7	6
QLD	54	22	32	12	59	15
SA	6	2	0	0	1	5
TAS	0	0	0	0	0	2
WA	2	1	2	0	0	0
NT	0	0	5	2	5	0

14.2 Testing for statistical significance indicated that all the results for drive zone were significant at levels of $p < 0.01$ – in short living beyond two hours drive time away from the Park was significantly correlated with higher levels of ignorance of the Park’s existence. In each year about a third of the respondents living beyond two hours drive time did not know of the Park, meaning that, to be positive, two-thirds did know of the Park. In the case of out of State visitors about one-third to half are seemingly unaware of the Park prior to their arrival.

14.3 Respondents were asked to identify from whence they had learnt about the Park, being given first a check list of possible sources of information. The results of this part of the questionnaire are shown in Table Twenty-seven. Over the years two categories account for about 50 to 60 percent of the sources of knowledge, these being signs and brochures, the latter seemingly becoming more important over the years. A third category 'other' accounted for a further quarter of the sources of information, and an open ended question asking respondents to provide a second source of information gives some insight into the composition of this category. This is shown in Appendix Six. What is apparent is the importance of informal sources, especially for local people, who tend to refer to family knowledge, living here, being local and 'having just known'.

Table Twenty-seven Sources of Knowledge about the Park

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Signs	219	34.8	85	32.9	156	30.6
Brochures	116	18.4	75	29.1	154	30.2
Advertisements	45	7.2	23	8.9	28	5.5
Website	5	0.8	1	.4	8	1.6
Friends	0	0	44	17.1	0	0
Visitor centre	8	1.3	5	1.9	6	0.7
Commercial tour	6	1.0	0	0	4	0.8
Airport display	2	.3	1	.4	1	0.2
TV	30	4.8	10	3.9	10	2.0
Radio	6	1.0	1	.4	4	.8
Visitor survey	36	5.7	2	.8	2	.4
Other	156	24.8	11	4.3	137	26.9
Total	629	100.0	258	100.0	510	100.0

14.4 Respondents were asked in all three years whether they possessed a copy of two guides to the Park. The first was a brochure that summarises zoning in the Park. The results indicated that in the first two periods about 45 percent had a copy, but in 2005 this percentage fell to 30 percent.

Table Twenty-eight Responses to ‘Do you have a copy of the SIMP zoning summary brochure?’

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
No	380	48.9	175	45.6	303	70.0
Yes	397	51.1	209	54.4	130	30.0
Total	777	100.0	384	100.0	433	100.0

The second guide was a recreational user guide. Table Twenty-nine records a similar pattern in that by 2005 the numbers possessing the guide declined to about 30 percent of those responding to the question.

Table Twenty-nine Responses to ‘Do you have a copy or the SIMP recreational user guide?’

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
No	402	51.7	283	73.9	640	75.5
Yes	375	48.3	101	26.1	207	24.5
Total	777	100.0	384	100.0	847	100.0

14.5 Question 14 on the questionnaire used a 7 point Likert type scale to ask respondents to evaluate the facilities and information provided. The score of ‘7’ represented ‘excellence’ and a score of ‘1’ ‘poor’. A non-response option was also provided to allow respondents not to answer the question where they felt unable, thereby avoiding a potential problem of skewing responses to the mid-point of the table that might otherwise arise. Table Thirty presents the mean scores and standard deviations, along with the numbers of respondents who answered each question. It can be seen that all scores were above the mid-point of the scale, indicating positive responses to the Park’s facilities and information provision. Among the findings is that one of the best sources of information (scoring 5.8) is the Park’s website, but this is used by only a small number of respondents, suggesting a need to better bring this to the attention of actual and potential users of the Park. The recreational user guide also continues to be well regarded by users, scoring about 5.7 across the years.

Table Thirty Overall Assessments of Marine Park Information Infrastructure and Media.

	No. 2002/3	Mean 2002/3	Std. Dev. 2002/3	No. 2004	Mean 2004	Std. Dev 2004	No. 2005	Mean 2005	Std Dev 2005
MPA website	59	5.14	1.319	43	5.35	1.044	25	5.80	.816
Pre Visit Information	320	4.39	1.923	114	5.20	1.390	64	5.20	1.181
Summary Brochure	328	5.73	1.131	213	5.62	1.182	139	5.61	1.269
Recreational User Guide	339	5.99	1.042	144	5.44	1.272	191	5.72	1.185
Summary Information Signs	435	5.33	1.521	187	5.17	1.445	207	5.63	1.373
Zone Boundary Signs	341	5.00	1.764	171	4.91	1.564	278	5.37	1.436
Interpretive Information Signs	409	5.14	1.769	162	4.91	1.459	227	5.29	1.468
Public Moorings	132	4.67	1.810	88	4.76	1.666	181	5.55	1.413
Ocean Zone Markers	123	4.67	1.918	94	4.79	1.688	92	5.14	1.694

14.5 Of some importance are the ratings relevant to potential boat users and recreational fishers relating to zoning, boundary markers and the like. By 2005 information relating to these issues was as well regarded as other sources, and an analysis by those boating and fishing indicated no statistically different perception between boat users and non-users and between fishers and non-fishers. The only difference found was in 2004 when boat users rated the ocean zone markers lower than non-users at 4.9 compared to 5.7 ($p < 0.01$), but that raises an issue of how familiar were non-boat users with such markers. In short, it can be concluded that no statistically significant differences existed between the groups.

14.6 Respondents were asked where they had obtained their brochures from. In 2005 just over 40 percent had obtained them from service stations, a marked difference from previous years (see Table Thirty-one). A secondary, and consistently popular source was a general store, which accounted for about 20 percent of the identified sources. The distribution of the brochures to respondents in 2002/3 and 2004 was also a significant source of respondents obtaining the information in those years.

Table Thirty-one Sources of the Zoning Summary Brochure &/or Recreational User Guide

	Frequency 2002/3	Percent 2002/3	Frequency 2004	Percent 2004	Frequency 2005	Percent 2005
Service station	0	0	6	3.0	78	43.6
Dive shop	7	3.9	7	3.5	5	2.8
Bait and tackle store	18	10.0	10	5.0	4	2.2
Visitor centre			6	3.0	3	1.7
Airport display	1	0.6				
Commercial tour	3	1.7			1	0.6
Marine Park Office	27	15.0	19	9.6	10	5.6
NPWS Office	9	5.0	8	4.0	3	1.7
Visitor survey		0	89	44.9	6	3.4
General store	43	23.9	25	12.6	37	20.7
Accommodation	14	7.8	6	3.0	23	12.8
NSW Fisheries Office	7	3.9	12	6.1	2	1.1
other	51	28.3	10	5.0	7	3.9
Total	115	100.0	198	100.00	179	100.0

14.7 Section 15 of the questionnaire comprised of a series of questions pertaining to the usefulness of the zoning summary brochure. As is shown in Table Thirty-two no significant differences between the years existed other than a lower assessment of a need to receive information on commercial tours in the year 2005 sample ($t=4.56$, $P<0.001$ when compared with 2002/3).

Table Thirty-two – Evaluations of the Usefulness of the Brochures

	N 2002/3	Mean 2002/3	Std. Dev
I found the zoning summary brochure to be useful.....	359	5.78	1.275
I found the zoning summary signs to be useful.....	340	5.46	1.404
I found that the recreational user guide had all the information I needed.	344	5.98	1.173
I would have liked details on commercial tours within the park included in the recreational user guide...	481	4.37	3.668

	N 2004	Mean 2004	Std. Dev
I found the zoning summary brochure to be useful.....	199	5.56	1.208
I found the zoning summary signs to be useful.....	179	5.25	1.402
I found that the recreational user guide had all the information I needed.	154	5.79	1.199
I would have liked details on commercial tours within the park included in the recreational user guide...	145	4.68	1.832

	N 2005	Mean 2005	Std. Dev
I found the zoning summary brochure to be useful.....	177	5.54	1.399
I found the zoning summary signs to be useful.....	254	5.37	1.494
I found that the recreational user guide had all the information I needed.	146	5.78	1.282
I would have liked details on commercial tours within the park included in the recreational user guide...	186	3.55	2.456

14.8 The next section of the questionnaire sought an answer whereby respondents stated the importance of the advisory material and experiences to them, again using a 7 point Likert type scale where '7' represented the highest score, and again a non-response option was provided. Table Thirty-three provides a listing of the results.

Table Thirty-three Importance Ascribed to Park Information

	No. 2002/3	Mean 2002/3	Std Dev 2005	No 2004	Mean 2004	Std. Dev 2004	No. 2005	Mean 2005	Std Dev 2005
Importance of zoning summary signs	679	5.48	1.93	295	5.37	2.06	447	5.77	1.67
Importance of zoning boundary signs	654	5.45	1.94	155	5.22	2.00	432	5.78	1.65
Importance of ocean boundary markers	553	5.07	2.30	238	5.65	6.85	380	6.02	3.94
Importance of zoning summary guide	665	5.73	1.65	247	5.06	2.77	406	5.75	3.36
Importance of access to water for launching	613	4.78	2.40	252	5.11	1.95	540	4.85	3.82
Importance of catching fish	669	4.68	2.32	242	4.81	2.23	617	4.48	2.42
Importance of seeing marine life	710	6.13	1.40	268	5.19	1.95	794	6.44	1.15

Some differences between sub-groups of respondents were found for these items. For example, in 2005 the importance of having access to water for launching boats was naturally of importance to those who stated they used boats. So, in this year, the mean score for 'boaties' was 6.46, whereas for non-boat users the mean score was given as '4.59' (where $t=4.05$ and $p<0.001$). Similarly, for 'boaties' the importance of catching fish was 5.78, and for non-boat users, 4.30 ($t=5.11$ and $p<0.001$). For recreational fishers the importance of catching fish was 5.86,

significantly ($p < 0.001$) above the overall mean and the mean score of those undertaking other activities.

14.9 However the main result is the comparative consistency of findings across the years. One way of measuring this was to use a coefficient of correlation. The data for 2004 and 2005 correlated at $r = 0.65$, and the years 2002/3 and 2005 correlated at 0.85. It can be concluded that the data in Table Thirty-three tend to a consistent pattern.

15.0 Open ended comments

15.1 The comments were divided between those who live outside of the 2 hour drive zone, and those who live within in. The data were then labeled with key words and categories created. Frequency counts were then undertaken. The categories 'great', 'keep it as it is' and 'just love' are, it is thought, comparatively self explanatory. The 'great' category covers such comments as 'this is a great place', 'a great place for a holiday' – in short are exclamations that express overall satisfaction with the Park or aspects of the stay. This category is closely linked with the 'just love it' category which are also exclamations of the 'we just love this place' sort, but which arguably have a nuance of establishing a degree of continuing involvement through repetition of visit. In 2005 these categories accounted for 64 of 143 comments; i.e about 45 percent of the total of comments made by those living outside the 2 hour drive zone. The largest single category was that of 'suggestions' where respondents made suggestions. These were then analysed and sorted in turn. Of the suggestions 4 sub-categories accounted for just over half of the suggestions. One was 'seaweed' which referred to a need to clean up seaweed on the beach and the removal of smelly seaweed. There were 15 responses relating to different information needs. Some were general like wanting information about zoning, some were specific, e.g.

The creek is dangerous and children get swept away. There are no signs to warn people. Also, more trees are needed in the area.

but the most common suggestion was one of either creating or implementing bans. Examples of these comments include:

I would like to see the 4WD areas policed more or totally remove access to 4WD altogether. A dog catcher is needed for the dogs that are not on leashes. There is super sharp gravel near the swimming spot.

It seems inconsistent with a Marine Park to allow fishing. The presence of fishing boats took away from the experience.

No motorbikes on the beach and penalties for dogs that are not on leads.

The "no dog" prohibition in National Parks needs to be enforced. Also, the "no vehicles on beaches" needs to be enforced.

In short, these respondents tended not to want dogs, motorbikes or four wheel drive vehicles on the beach.

Table Thirty-four Analysis of Open-Ended Comments, 2005

2005 – Inside 2 hour drive zone		2005 – outside 2 hour drive zone	
Category	Count	Category	Count
‘Great’	25	‘Great’	14
Information request need	3	Information request need	2
Keep it as it is	30	Keep as it is	24
Just love it!	9	Just love it!	14
Observations	14	Observations	21
Suggestions	61	Suggestions	56
Amenities	3	Amenities	4
Ban	16	Ban	12
Lift bans/relax bans	14	Lift bans/relax bans	0
Information provision to help	3	Information provision to help	15
Seaweed	2	Seaweed	5
Total Number of All Comments	334	Total Number of All Comments	329

15.2 The ‘observations’ category was treated in a similar way. In essence most of the observations tended to be specific references to places or activities that caused

high degrees of satisfaction such as a knowledgeable officer, the taste of oysters, the friendliness of the staff, but one clear category did emerge, which was related to the improvement in the marine life. Three made specific reference to improvements in the marine life, but one thought the fish numbers were insufficient. It should be noted that 24 of the 143 respondents made specific requests to keep the Park as it is, with most arguing that it was necessary to protect the environment but did so in a way that permitted acceptable levels of access and recreation.

15.3 For those living inside the 2 hour drive zone 64 of the respondents made comments that fell into the categories 'great', 'just love it' and 'keep as it is'. The obvious difference between this group and those living beyond 2 hours was the appearance of the category, 'lift bans/relax bans'. Of the respondents 14 made various comments such as:

Stop locking out anglers.

I think dogs should be allowed but other than that it's fantastic

like to bring dogs - as long as you clean up after him

More tag and release is taking place and pelagic fish are being taken. Fishermen are being persecuted. No more increases in closure zones for the fishermen. Spearfishers get away with too much. It is outrageous to have to get a recreational fishing licence.

I would like to see plenty of unrestricted local areas

15.5 In 2002/3 a total of 245 respondents made comments, of which 125 came from visitors living outside the 2 hour drive zone. Table Thirty-five indicates a categorization of responses, and it can be seen that again those regarding the Park as a special place account for 43 of the coded responses. Again a strong feeling that bans should be introduced or implemented emerges and sample comments include:

Commercial fishermen are still exploiting fish stocks and more regulation is still needed

Lots of dogs (unleashed) on areas where they shouldn't be.
Need more policing or enforcing.

Should have extended distance from the island for sanctuary zones for Grey Nurse shark, well worth preserving.

Rangers should patrol the beaches more often, especially back beach Woolgoolga, and keep the vehicles off the beaches

15.6 The table includes two respondents who sought a relaxation of bans, and these included the statements:

Australia is losing its freedom ie. Beach fishing, bait collecting, paying a fee to fish in salt water

Less sanctuary zones!

While within the category of observations one respondent commented

Patrolling by National Parks Rangers NOT appreciated in Sandon village. Continual intrusion into our peaceful environment is not wanted!!!

Table Thirty-five Analysis of Open-Ended Comments, 2002/3

2002/3– Inside 2 hour drive zone		2002/3 – outside 2 hour drive zone	
Category	Count	Category	Count
'Great'	8	'Great'	9
Information request need	11	Information request need	5
Keep it as it is	20	Keep as it is	20
Just love it!	6	Just love it!	14
Observations	8	Observations	31
Suggestions		Suggestions	
Amenities	12	Amenities	4
Ban	18	Ban	10
Lift bans/relax bans	4	Lift bans/relax bans	2
Information provision to help	2	Information provision to help	7
Seaweed	0	Seaweed	2
Total Number of All Comments	120	Total Number of All Comments	125

- 15.7 Most of the other observations referred to positive aspects of experiences, while other suggestions related to a need for better signage for both informational needs and to better clarify the implementation of regulations.
- 15.8 For those living inside the two hour drive zone one finds similar expressions about a need to preserve, protect, sustain and enjoy the Park and its facilities. In terms of differences between the two years, one immediate finding is that the numbers of those voicing opinions that request abandoning or relaxing current regulations has increased from 4 in 2002/3 to 16 in 2005. However, in percentage terms the numbers of ‘complaints’ rose from 3.3 percent to 4.7 percent – an increase that is not statistically significant. Nonetheless, while still a minority, the manner in which some respondents made their views known is of interest inasmuch they tended to be based on a perception of social trends of reducing freedom (as evidenced by the above examples) rather than specific evidence about diversity and number of fish stocks and preservation needs. In short, ideological differences seem to exist. From the viewpoint of fish stocks, a number of those making observations indicated that in their view fish stocks were recovering and two informants in each of the years sought to extend the boundaries of the Park.
- 15.9 From the viewpoint suggestions being made about amenities and information in each of the years, many were specific as to the location and content of signage, the need to remove ‘dust’, ‘dirt’, the need to stop leaking sewage, requirements relating to car parking etc. A list of the comments made in 2005 is available as some of these issues may still be current.
- 16.0 Overall satisfaction with the visit**
- 16.1 In 2002/3 the overall satisfaction with a visit to the Park as measured by a seven-point Likert type scale where ‘7’ represented the highest score, was 6.3. There was no statistically significant difference between those living inside and outside the 2 hours drive zone, and nor was there when comparisons were made on the basis of time spent in the Park. In 2004 the level of satisfaction declined by one whole point to 5.3, and again there was no statistical difference based on duration of stay in the Park. However, in this year the difference between those living

within 2 hours of the Park (at 5.7) and those outside this drive zone (at 5.1) was significant ($t=2.45$, $df=232$ and $p=0.015$). For the final year, 2005, the same data were an overall level of satisfaction of 6.5, no difference as to place of residence of visitors, but ANOVA showed a statistically significant difference with reference to duration of stay. A clear negative slope emerged whereby the shorter the stay the more satisfied were visitors, with those staying under 2 hours recording a satisfaction score of 6.67, while those staying from 1 to 2 months scored 6.10. Pragmatically, however, this final score is a) still high, b) is higher than the mean score recorded for 2004 and thus arguably the statistical difference emerges in part from greater variability of smaller sample sub-sizing rather than anything substantial.

- 16.2 Respondents were asked what it was that they enjoyed most about the Park, and the data for 2005 is here reproduced on the premise that this is the most recent year. The data are shown in Table Thirty-six and there were 807 comments coded and categorised. Of the respondents only 60 failed to make a comment.
- 16.3 Many of the items are interlinked. For example, among the components of the category 'beaches' that appealed to people were the sense of isolation and lack of crowds, the scenic aesthetics of the beach, and the fact they were safe for children. Equally the lack of commercialism, the views and ambience aided the senses of quiet and relaxation that people expressed as a key source of enjoyment. The quality of water is often commented upon as well. In short, the categories listed are not mutually exclusive, but often linked.
- 16.4 The table shows that these dimensions are the most frequently cited by the sample in 2005. The next cluster of comments begins to further clarify the appeal of the Park and particularly its beaches. It can be seen that these are safe for children, the weather is good, as is the surf and conditions for swimming. Given the popularity of swimming as an activity, and its appearance in the Table, the ability of the Park to provide clear water, safe swimming and good beaches fits with the previous data outlined above in this report.

Table Thirty-six Aspects of the Park Most Enjoyed - 2005

Item	Frequency
Relaxing/quiet/sense of isolation	140
Beaches	135
The scenery/beauty/ambience/natural setting	109
Lack of crowds/commercialism/not developed	85
The water (clean, quality, refreshing, clear, warm)	84
No comment made	60
Surf	48
Good weather/sunshine	39
Swimming	36
Good for children, safe, clean	31
Fishing	27
Animal/sea life – viewing marine life	16
Diving	16
Conservation zones/policies/success of in improving environment	14
Everything	11
Walking	10
No pollution/clean	8
Sun/sun bathing	8
Being in nature/outdoors/sense of freedom	7
Its lifestyle	7
Always here to enjoy/it has not changed/will be here in the future	6
Time with the family	6
A good place	5
Good facilities.	5
Snorkelling	4
BBQs	3
Ease of access	3
Friendly people	3
Girls	3
The atmosphere of a "little town"	3
The Creek	3
The Estuary	3
Camping	2
Canoeing/kayaking	2
Getting away	2
It's fun	2
No dogs	2
Woolgooga is a safe, patrolled, surf beach with good facilities.	2
Birthday	1
Getting a good feed of fish and a good day.	1
Hot chips	1
The shops	1
The waves	1
The Yacht Race	1
There is no rubbish and that it is clean.	1
There is no sand at Red Rock.	1

- 16.5 As a marine park, the next cluster of themes not surprisingly pertain again to water quality. It is noted that the fishing and diving are ‘good’, and that one of the pleasures of the Park is seeing the fish and marine life. This leads to 14 respondents making general comments about the success of environmental and Park implementation policies. This might be seen as linking with the expression of appreciation of a certain timeliness of the Park; that is that it ‘remains’ the same, and will continue to do so.
- 16.5 The bottom half of the list is completed by a series of individual comments, but most provide examples of the way in which people relax. It should be noted the relaxation theme, while primarily one of enjoying the peace and scenery of the Park, its lack of commercialization and the sense of isolation that it engenders, also has a sub-theme of being away, of having time for the family and finding relaxation through physical activities such as swimming, walking and fishing.
- 16.6 Within the leisure studies literature a key concept is the Leisure Motivation Scale. This comprises four dimensions, the need for relaxation and escape, the social need for interaction with others, the intellectual need to acquire knowledge and a need to achieve through acquiring competency and meeting challenges. From the above categorization it might be said that Solitary Island Marine Park meets needs for relaxation and a related psychological need for self renewal through an appreciation of scenery and the peace it engenders, while to a lesser extent it meets some social needs for bonding with family and friends in often an atmosphere of non-commercialised, natural settings, while offering an opportunity to acquire knowledge about marine environments in Australia. Finally, the need for exercise is being met within scenic, warm and safe environments.

17.0 Discussion and findings

- 17.1 The findings indicate continuing high levels of satisfaction with the Park. As noted the sources of satisfaction appear to be associated with key characteristics of the Park such as its scenic values, the quality of the water and equally there appears to be considerable appreciation of the conservation ethos. While there

are some critical of the Park and perceived limitations upon 'freedoms' this group represent a small minority within the total sample.

- 17.2 One factor relevant to the formation of attitudes is the provision of information, and it does appear that there has been a reduction in the numbers indicating possession of the recreational users' guide, and the zoning guide in 2005 as compared to 2002/3.
- 17.3 Most of the activities recorded pertain to the beach and swimming, walking and surfing seem to be popular activities throughout a range of ages. Swimming and surfing are equally popular with both sexes, although males are more likely than females to cite surfing as their 'number one' activity.
- 17.4 About a tenth of the sample who note activities go fishing, and three species of fish account for two-thirds of the mentioned sought types of fish; these being whiting, bream and flathead.
- 17.5 More specifically the findings indicate that the total number of respondents are 1,106 males and 1,880 females. The samples for 2002/3 and 2005 closely replicate each other in many respects, but that of 2004 comprises about 40 percent of the number of each of the remaining two, and displays different characteristics. However, the differences are not so great for many variables as not to permit comparison. Overall patterns of perceptions, attitudes and behaviours of visitors display high degrees of consistency in the years being considered. High degrees of satisfaction are recorded with visits to the Park, and these are consistent across various sub-samples.
- 17.6 About two-thirds of the total sample are aged 25 to 55 years of age. Of the visitors, about 80 percent come from New South Wales. Just under half of all visitors live within 2 hours drive time of the Park. About half of all visitors are in groups where 3 or less adults are present. There are significant differences in the years with reference to the presence of children under the age of 14 years. In 2005 only about a fifth of respondents indicating the presence of such children.

- 17.7 About three-quarters of visitors from outside the 2 hour time zone use the commercial accommodation sector, with caravan parks and holiday homes/units accounting for 60 percent of such accommodation.
- 17.8 The most popular activity is usage of the beach. Four areas account for 40 percent of the named places visited – these being Woolgoolga, Wooli, Minnie and Moonee.
- 17.9 There is a decline of the mean duration of stay over the three year period, but the range of duration of stay is great. The median hours stay in 2005 was 3 hours.
- 17.10 Swimming and surfing are mentioned by 70 percent of respondents as the most popular activities. Overall swimming, walking and surfing account for about half of all the activities mentioned when measured by frequency of mentions. About 10 percent of the sample mention fishing. Of those that go fishing, estuary based fishing is cited by 40 percent of the sample, followed by beach based fishing (25 percent). Whiting, bream and flathead are the most commonly caught fish species. About one-third of the boats identified by fishers had GPS.
- 17.11 While in excess of 80 percent of those living within a 2 hour drive zone knew of the Park, about one-third of those living beyond the 2 hours drive zone had no prior knowledge of the Park before arrival. Signs and brochures are the most common sources of knowledge about the Park's existence. There is a significant increase between 2002/3 and 2005 in those not having a copy of the Solitary Island Marine Park recreational user guide. There are significant changes over the years as to the source of obtaining such guides, with, in 2005, service stations becoming the most common source.
- 17.12 The most common sources of satisfaction with the Park are a combination of appreciation of the scenic beauty, the quality of the beaches and water, the lack of commercialization and crowding and the general ambience of the Park.

18.0 Recommendations

18.1 In terms of actual recommendations that potentially arise from the findings, it might be said that these generally point to the continued implementation of current policies with some attention being given to the dissemination of information. However, some specific recommendations arise with reference to the research instrument itself. These include:

- a) ensuring sufficiently large samples: that of 2004 displayed greater variation than that of the remaining two years perhaps because of its smaller size;
- b) the current questionnaire is not constructed to relate the overall satisfaction score with variables that generate that satisfaction. It is not therefore possible to generate a regression analysis for the sample as a whole, and differing sub-samples, to assess which factors are the most important in generating satisfaction for visitors;
- c) the current structure of the questionnaire does not lend itself to identifying a clear prioritization of importance of variables for either behavioural, perceptual and attitudinal characteristics, thereby making it difficult to highlight specific policy implications of the findings. The use of importance-evaluation questioning techniques would permit that to evolve, and generate statistically derived clusters based on behavioural patterns and attitudes. Cluster analysis would also permit a quantification of types of visitors based on these characteristics;
- d) it would be possible to structure such a questionnaire, but in doing so care must be taken to retain some commonality with existing questionnaires to permit longitudinal comparisons.

Appendix One. Description of the Park from 2004 Report

The Solitary Islands Marine Park was declared in 1998 (previous to this it was the Solitary Islands Marine Reserve). The Marine Park is located on the northern NSW coast, which generally experiences a sub-tropical climate. Warm tropical waters from Queensland (East Australian Current) often bathe the Marine Park, bring with it a range of tropical marine flora and fauna. Temperate waters from southern regions of Australia also influence the Marine Park, resulting in a unique mix of tropical, sub-tropical and temperate species that can co-exist. Over 500 species of fish have been identified in the Marine Park to date, as well as numerous endangered species or species endemic to the area. The Marine Park is also the temporary home to many species of migratory birds which come under the Japan Australia Migratory Birds Agreement (JAMBA), and China Australia Migratory Birds Agreement (CAMBA) during various times of the year.

A range of habitats within the Marine Park support the diverse mix of marine flora and fauna including coral reefs, beaches, rocky shores, fringing reefs and subtidal reefs open ocean, seagrass, mangrove, saltmarsh and soft sedimentary environments. The most significant morphological features of the Marine Park are the five major islands situated within its boundaries; North Solitary, North West Solitary, South West Solitary, South Solitary and Split Solitary Islands.

The Marine Park encompasses a number of coastal estuaries which are generally in a relatively natural state due to the catchment protection created by the Yuraygir National Park and the Moonee Beach Nature Reserve, situated adjacent to much of the marine park. These estuaries are crucially important in the ecology of many marine and terrestrial species of flora and fauna found within the park. At least 70% of fish species caught in NSW rely on estuaries at some stage in their life cycles.

Marine Park Use

The Marine Park is culturally important to local aboriginal communities as many cultural and spiritually significant sites are located within or directly adjacent to the Marine Park

boundaries. Many of the aboriginal people still continue to undertake traditional practices to this day such as fishing and collecting by traditional methods. Some culturally important sites include many aboriginal middens and the Arrawarra fish traps which are situated on the north western side of Arrawarra Headland.

The Solitary Islands Marine Park is used for a multitude of activities. Popular activities within the park include both commercial and recreational fishing, scuba diving, whale and dolphin watching, research, collecting, boating, surfing and other beach activities.

The five major islands located within the park are a major focus point for a variety of offshore recreational activities such as snorkelling, scuba diving, fishing and sight seeing. The islands are recognized as one of Australia's premier diving locations due to a higher than usual level of species diversity. The many beaches, rocky shores and estuaries which make up the landward boundary to the Marine Park are also utilised by visitors for a variety of marine and terrestrial based recreational activities. Commercial tour operators provide a range of opportunities for visitors such as surf tuition, whale watching, charter fishing and diving. Commercial fishermen also supply the local area with a range of fresh seafood caught within the Marine Park.

Marine Park Zoning

Habitats within the Solitary Islands Marine Park are protected by four types of zones, with each zone providing a different level of protection. The purpose of these zones is described below. The locations of the different zones within the marine park is contained in the Zoning Plan.

Sanctuary Zones

Sanctuary zones provides the highest level of protection for habitats, areas high in biological diversity, key sites for threatened or other significant species or areas that contain important natural or cultural features. The only activities permitted in sanctuary zones are those that do not involve the harm or take of any plants or animals. All fishing is prohibited in these zones so that marine life can continue to thrive and reproduce. Many recreational activities may be conducted in sanctuary zones such as surfing, diving, snorkelling, boating, guided tours and approved research and

educational activities. These activities offer experiences that promote public appreciation, understanding and enjoyment.

Habitat Protection Zones

Habitat protection zones are designed to ensure ecological sustainability while providing for reasonable use. While habitat protection zones allow for a range of activities such as recreational fishing, some forms of commercial fishing, tourist activities and fishing competitions, however, additional restrictions may exist in some areas.

General Use Zones

General use zones are generally limited to deeper offshore areas and provide for a range of activities, including recreational and commercial fishing, but exclude activities such as purse seine netting and set lining.

Special Purpose Zones

Special purpose zones are placed in areas or at features that require specific management, not appropriate for other zoning. This may include oyster leases, boat harbours or culturally significant areas.

Appendix Two. Survey Points

Location	Sites	Techniques
Team 1		
Wooli	Boat ramp, Wooli River and reserve and Bushland Caravan Park	<ul style="list-style-type: none"> • Hand out survey forms to people getting off charter boats at jetty • Hand out survey forms at public boat ramp • Survey stand at shelter near toilets • Walk around face to face interviews along river, break wall and beach • Survey stand at Bushland Van Park boat ramp
Minnie Waters	Main Beach Minnie Waters Lagoon	<ul style="list-style-type: none"> • Survey stand at shelter • Survey stand near lifeguards • Walk around face to face interviews • Survey forms left on cars
Diggers Camp / Village	Main Beach Wilson's Beach	<ul style="list-style-type: none"> • Door to door • Residents hand out and collect survey forms to campers in NPWS sites • Hand out to people along the beach
Sandon Village		<ul style="list-style-type: none"> • Door to door
Team 2		
Woolgoolga	Main Beach	<ul style="list-style-type: none"> • Survey stand set up at surf life saving club • Face to face interviews on the beach • Face to face interviews through park area and fishers and boaters exiting the boat ramp
Red Rock	Boat ramp and river reserve	<ul style="list-style-type: none"> • Provide to fishers and boaters exiting the river • Face to face interviews throughout the park and reserve
Arrawarra / Mullaway	Boat ramp at Arrawarra Beach, Mullaway Beach, Mullawarra Beach	<ul style="list-style-type: none"> • Survey stand set up in park area between two boat ramps • Surveyed fishers and boaters exiting the boat ramp

		<ul style="list-style-type: none"> • Face to face interviews through park area and beaches
Emerald Beach	Main Beach	<ul style="list-style-type: none"> • Face to face interviews with people on the beach
Team 3		
Coffs Harbour	Boat ramp, north wall, Muttonbird Island, Park Beach surf life saving club, Diggers Beach and Charlesworth Bay	<ul style="list-style-type: none"> • Survey stand set up at the boat ramp and other locations dependant on weather • Face to face interviews with people at the boat ramp • Face to face interviews with people on the beaches
Sapphire	Sapphire Beach	<ul style="list-style-type: none"> • Face to face interviews with people on the beaches
Moonee	Picnic area and estuary	<ul style="list-style-type: none"> • Face to face interviews with people at the picnic and estuarine areas.

Appendix Three. Composition of groups of companions to respondents by age and gender

Age and Gender of First Companion

	Male 2002/3		Female 2002/3		Male 2004		Female 2004		Male 2005		Female 2005	
	No	%	No	%	No	%	No	%	No	%	No	%
14 to 17 years	11	4.3	9	2.4	5	3.2	7	5.0	26	10.3	35	9.5
18 to 24 years	34	13.2	34	9.1	18	11.7	20	14.5	27	10.7	24	6.4
25 to 34 years	40	15.6	60	16.2	18	11.7	23	16.7	41	16.2	61	16.5
35 to 44 years	86	33.4	140	37.7	55	35.7	46	33.3	74	29.2	120	32.4
45 to 54 years	56	21.8	74	19.9	43	27.9	27	19.6	54	21.3	79	21.3
55 to 64 years	22	8.6	40	10.8	9	5.8	7	5.0	19	7.5	32	8.6
65 + years	8	3.1	14	3.8	6	3.9	8	5.0	12	4.7	19	5.1
Total	257		371		154		138		253		370	

Age and Gender of Second Companion

	Male 2002/3		Female 2002/3		Male 2004		Female 2004		Male 2005		Female 2005	
	No	%	No	%	No	%	No	%	No	%	No	%
14 to 17 years	39	22.9	26	15.9	25	27.4	11	14.6	33	24.8	37	25.1
18 to 24 years	21	12.3	19	11.6	13	14.3	18	24.0	19	14.3	20	13.6
25 to 34 years	27	15.9	32	19.6	11	12.1	15	20.0	16	12.0	22	14.9
35 to 44 years	43	25.3	45	27.6	20	21.9	15	20.0	33	24.8	27	18.4
45 to 54 years	25	14.7	21	12.8	15	16.5	8	10.6	20	15.0	22	14.9
55 to 64 years	12	0.7	11	6.7	6	6.5	4	5.3	5	3.7	12	8.1
65 + years	3	0.1	9	5.5	1	1.0	4	5.3	7	5.2	7	4.7
Total	170		163		91		75		133		147	

Age and Gender of the Third Companion

	Male 2002/3		Female 2002/3		Male 2004		Female 2004		Male 2005		Female 2005	
	No	%	No	%	No	%	No	%	No	%	No	%
14 to 17 years	24	23.3	19	13.9	14	26.4	12	19.3	16	20.2	24	23.7
18 to 24 years	10	9.7	13	9.5	10	18.9	11	17.7	8	10.1	16	15.8
25 to 34 years	15	14.6	28	20.5	7	13.2	10	16.1	10	12.6	15	14.8
35 to 44 years	27	26.2	37	27.2	13	24.5	11	17.7	22	27.8	27	26.7
45 to 54 years	18	17.5	20	14.7	6	11.3	14	22.6	16	20.5	7	6.9
55 to 64 years	5	4.8	15	11.0	2	3.7	4	6.4	2	2.5	3	2.9
65 + years	4	3.8	4	2.9	1	1.8	0	0	5	6.0	9	8.9
Total	103		136		53		62		79		101	

Appendix Four. Accommodation Usage

	Numbers 2002/3	Numbers 2004	Numbers 2005
With friends	31	23	47
With relatives	76	42	54
Motel	22	15	19
Hotel	15	7	18
Caravan park	163	101	206
Holiday cabin	15	10	7
Boat / yacht	4	3	2
Holiday unit / house	140	54	123
NPWS campground	35	15	12
Own house	203		
Other / not known	9	13	
Day visitor	20		
Total	735	283	570
Missing	42	101	277
Total	777	384	847

Appendix Five. GPS Models Used

GPS Model	Frequency 2002/3	Frequency 2004	Frequency 2005
Aperco 12	1		
Faruno			2
Garmin	7	1	8
Gammut			2
Haines	1	1	
Hummingbird			1
Lawrance	1	1	1
Low range	1		
Magellen	1		
Mercury	1		
Nawman			1
PEK	1		
Savage	1		
Seafarer		1	
Stessel			1
Trailcraft			1

Appendix Six Other Sources of Information about the Park

	Frequency 2002/3	Frequency 2004	Frequency 2005
Signs	219	2	6
Brochures	116	6	51
TV	30	1	9
Radio		1	7
Visitor survey	36	1	4
Family knowledge/Just know/Live here		3	98
Friends		4	
Word of mouth			9
Advertisements	45	3	27
Commercial tour	6	1	3
Visitor Centre	8	1	4
Active in environmental stuff		1	1
Website	5		1
Newspaper		1	7
Work			1
Caravan Park			1
Dive Shop			1
Fisheries			1
Fishing Club			2
Government gazette			1
Guide books			2
Have been coming here for years			3
Hostel			1
I work for the Marine Park			1
Information from shop			1
information night		1	1
Involved in process			1
Local fisherman			1
Local knowledge		6	80
From locals			3
Map			1
Meeting			1
Movie			1
Parents			1
People			3
Public meeting			1
Ranger			1
School		1	3
Scuba			1
Shops			2
Study			1
Tourist information			1
Used to fish			1
Worked for NSW Fisheries			1

