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Clem Tisdell‡ and Clevo Wilson†

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WILDLIFE-BASED TOURISM AND INCREASED SUPPORT FOR NATURE CONSERVATION FINANCIALLY AND OTHERWISE: EVIDENCE FROM SEA TURTLE ECOTOURISM AT MON REPOS

Abstract

Arguments of most conservationists supporting ecotourism have been based upon the views that it is environmentally friendly as a resource-use and that receipts from it can counter demands to use the natural resources involved for more extractive economic purposes. But wildlife-based ecotourism can also have positive impacts in itself on the willingness of tourists to pay for wildlife conservation, strengthen the pro-conservation attitudes of tourists and foster personal actions by them which contribute to wildlife conservation. These aspects are explored in this article on the basis of a survey of tourists visiting Mon Repos Beach near Bundaberg, Queensland for the purpose of watching marine turtles. The results enable several of the conservation impacts of this experience on tourists to be quantified, and highlight important relationships between specific socio-economic variables and willingness of tourists to pay for the protection of sea turtles. Furthermore, it is shown that the on-site experiences of ecotourists have positive impacts on the willingness of tourists to pay for the conservation of wildlife, and that willingness to pay is sensitive to whether wildlife is seen or not. It is suggested that *in situ* ecotourism is likely to be a more powerful force for fostering pro-conservation attitudes and actions amongst visitors than *ex situ* wildlife-based tourism in aquaria and zoos.

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Introduction

The potential of wildlife-based ecotourism to provide support for nature conservation or conflict with it has been much discussed in the literature[1,2,3,4,5,6]. Most attention in such discussions has however been focused on (a) the on-site interconnection between ecotourism development and the conservation of nature or (b) on the ability of financial receipts and positive economic impacts from such tourism to provide continuing political support for the conservation of the protected areas involved and counter moves to use their land area for more extractive economic purposes. The conservation argument is often further bolstered by consideration of the total economic value of the protected area involved, that is both use and non-use values[7,8] or on-site and off-site values[9]. However, the impact of ecotouristic experiences on visitors in terms of their increased willingness to pay for nature conservation and strengthening of their behaviours to conserve nature have been given little consideration.

The purpose of this article is to rectify this position by drawing on results from a survey of tourists visiting Mon Repos Conservation Park in Queensland to watch marine turtles on the beach. The article is intended to demonstrate that ecotourism experiences can strengthen the willingness of visitors to pay for conservation of the wildlife viewed, and can result in visitors adopting a more positive set of conservation attitudes and actions after their visit than before it. These are important benefits of ecotourism from a conservation point of view. The article also identifies some factors which influence changes of this type.

In this article, we provide some background on sea turtle-based ecotourism at Mon Repos, then describe the survey and visitors' profile before briefly commenting on the role of marine turtles in generating tourism in the Bundaberg region and the regional economic impact of turtle watching at Mon Repos Beach. Subsequently the focus is on whether visitors to Mon Repos Beach intent on seeing marine turtles show an increase in their willingness to contribute financially to the conservation of marine turtles after their visit and on identifying the factors likely to influence their willingness to pay for such conservation, including their on-site experiences in viewing turtles. Finally, we consider whether or not their visit

increased the likelihood of visitors taking actions (additional to increased financial action) to conserve marine turtles.

Non-consumptive wildlife oriented recreational (NCWOR) tourism is a significant and a popular segment of the tourism industry[10,11,12]. It has been shown that such tourism activities generate significant economic benefits[13]. Economic benefits are a useful tool in building political support for the conservation of wildlife species[14], especially if public money has to be spent on their conservation and land and has to be set aside for their preservation. Economic benefits are also useful to justify conservation measures adopted which may impinge on human activities. For example, reducing human access to sea turtle nesting beaches and restricting boat speeds where turtles forage. However, apart from the economic benefits NCWOR tourism generates, they also impart conservation and educational benefits to visitors from a first hand experience in viewing wildlife in their natural surroundings. The conservation benefits include financial contributions made for the conservation of the species that is being viewed. These contributions further strengthen the support for the conservation of wildlife resources. Educational experiences derived from coming in direct contact with wildlife also contribute to conservation efforts.

Sea turtle-based ecotourism at Mon Repos - background

Sea turtle-based ecotourism is increasingly becoming popular in Australia and in other parts of the world where sea turtles nest in significant numbers. Mon Repos is the most visited and accessible sea turtle rookery in Australia for tourists. It is located on the coast near Bundaberg in central Queensland, north of the coastal township of Bargara (Figure 1). Mon Repos beach, about 1km in length, supports the 'largest concentration of nesting marine sea turtles on the eastern Australian mainland and is one of the two largest loggerhead turtle rookeries in the South Pacific Ocean region'[15]. The breeding that takes place here is vital for the survival of loggerheads *Caretta caretta* in the region. Flatbacks *Natator depressus*, and greens *Chelonia mydas*, too, visit Mon Repos, but in low numbers. In addition to these three species, the giant leatherbacks *Demochelys coriacea* occasionally nest at Mon Repos and on beaches north of Mon Repos.

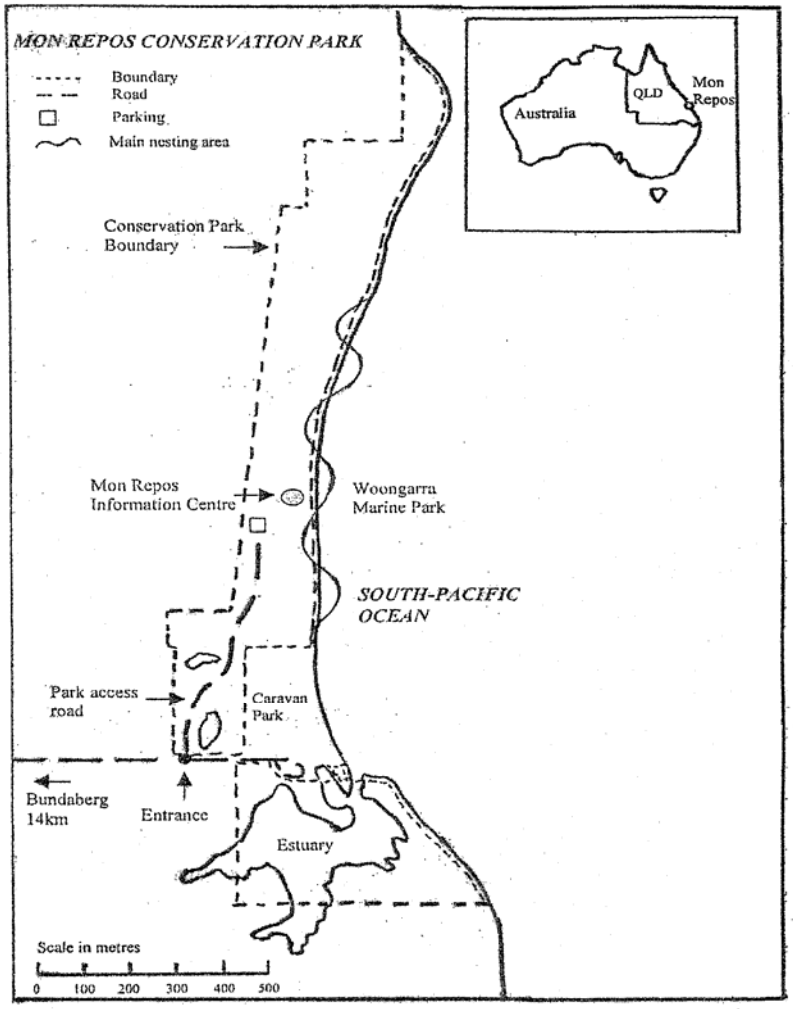

Figure 1. Location and Site map of Mon Repos Conservation Park and its environs

Data maintained by Queensland Parks and Wildlife Service (QPWS) show that on average 183 loggerheads, 6 flatbacks and 2 green sea turtles were recorded during the last 4 years at Mon Repos. Table 1 gives a breakdown of species and numbers seen at Mon Repos during these years.

Table 1. Nesting sea turtles at Mon Repos for the last four seasons

Turtle Season	Species		
	Loggerhead	Green	Flatback
1996/7	198	2	4
1997/8	119	1	8
1998/9	262	2	7
1999/2000	152	3	4

Source: Queensland Parks and Wildlife Service, 2000 (unpublished data)

Each year, female sea turtles travel thousands of kilometres from their feeding grounds to nest at Mon Repos. QPWS research shows that they travel from as far away places such as Indonesia, New Caledonia, Vanuatu, Solomon Islands or as close as Hervey Bay (Australia). It is widely believed that sea turtles that nest in Mon Repos are those that hatched on the same beaches many decades ago.

Sea turtle viewing at Mon Repos dates back to the early part of the 1900s but was only a local event[16]. However, since the establishment of the Queensland Turtle Research Programme in 1968 visitor numbers have increased. A formal sea turtle viewing programme was commenced in 1985 by research staff to manage growing crowds and the 1994-95 season marked the commencement of commercialised ecotourism at Mon Repos. During the last seven seasons, a total of 135,984 visitors came to Mon Repos to view sea turtles. The number of visitors for the 1999/2000 season was 23,485.

Mon Repos Conservation Park is managed by QPWS. Use of the beach by the public is restricted during the nesting season. Visitors are taken to the beach to view sea turtles at night under the guidance of QPWS rangers and volunteers. Each group consists of not more than 70 persons. The use of torches is restricted and visitors are guided so as to have minimal adverse impact. An interpretative program is conducted by QPWS staff on the beach to explain the egg laying process of sea turtles and hatchling behaviour. The display centre and audio-visual presentations provide further information on sea turtle nesting behaviour, life history, migration, biology, evolution, sea turtle research and conservation.

Turtle watching at Mon Repos is seasonal. The season begins in mid-November and continues until the end of March of the following year. It must be noted here that during the first half of the sea turtle season, only adult sea turtles are seen. In the second half of the season, both sea turtles and hatchlings are seen and in the latter part of the season mainly hatchlings are seen. All of these phases have their attractions to tourists.

The survey and visitors' profile

A survey of visitors to Mon Repos was undertaken during the 1999/2000 season. A detailed questionnaire was developed to gather the necessary information. The questionnaire was subdivided into two main sections. Part I of the questionnaire obtained background information on the visitors current visit to watch sea turtles at Mon Repos and the costs

involved with the trip to Bundaberg and Mon Repos. Socio-economic data were also obtained. Part II of the questionnaire included collecting data on educational aspects, conservation appreciation of sea turtle viewing and economic valuation questions. Section I of Part II also obtained information to determine whether visitors had seen sea turtles and/or hatchlings during their current visit.

Random sampling techniques were used to obtain the data from visitors. The survey was conducted from December, 1999 to end of March, 2000 by volunteers and rangers of the QPWS attached to Mon Repos. Approximately 15 questionnaires per day were randomly distributed to visitors at the entrance and/or while awaiting their turn to watch sea turtles. During the 4 month survey, 1,200 questionnaires were distributed, out of which 519 usable responses were received. The response rate was 43 percent. These responses correspond approximately to the same number of visiting groups so that responses from about 10% of visiting groups during the 1999/2000 season were obtained. Completed survey forms could either be left with rangers or volunteers at Mon Repos or returned to us in a postage pre-paid envelope.

Prior to the survey, a pilot study was conducted in November, 1999. A total of 25 responses were obtained. This enabled us to check out the viability of the questions prepared to collect the necessary data. As a result, the questionnaire was modified, removing questions that proved difficult to administer. The number of questions, too, were reduced.

In the sample group there were visitors from 18 countries and the majority of them, as expected, were from Australia. A considerable number of European tourists visited Mon Repos. For example, there were significant numbers of visitors among the surveyed respondents from the U.K (21%), Germany (6%), Netherlands (3%) and Switzerland (2%). North Americans, too, visited Mon Repos in quite significant numbers (see Figure 2). The number of Asian visitors was almost negligible, but it is possible that fewer Asians completed the questionnaire because of language limitations. There were some visitors in the surveyed group from Israel and South Africa where sea turtle viewing is established. Some of these respondents had in fact visited these sites in their respective countries.

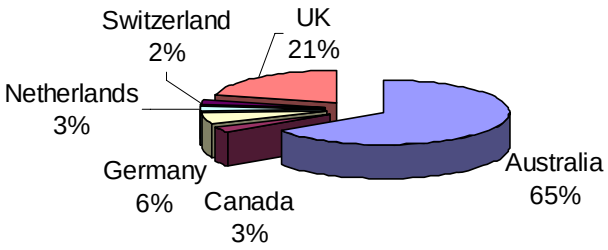

Figure 2. Percentage of major nationalities of surveyed visitors to Mon Repos

Statewise, most surveyed visitors to Mon Repos were from Queensland (79%). This is probably due to relative proximity to Mon Repos and availability of information about sea turtle viewing especially made available by the local media.

The majority of surveyed visitors came to Mon Repos to watch sea turtles (78%) while some came especially to study sea turtles (11%) and entertain visitors (9%). The largest number of respondents said that they would not have visited Mon Repos if not for the presence of sea turtles.

Tourism generation and economic-impact of presence of sea turtles

The data obtained from the survey show that the presence of sea turtles in the region is an important factor in attracting tourists to the Bundaberg region during the sea turtle season. 40% of the respondents said that they would not have visited Bundaberg if not for the presence of sea turtles. The proportion of tourists who would and who would not have visited Bundaberg if not for the presence of sea turtles is shown in Table 2.

Table 2. Surveyed visitors to Mon Repos who came to the Bundaberg region due to the presence of sea turtles

	Number of Respondents	Percentage
Yes	280	54
No	208	40
Locals	25	5
No response	06	1
Total	519	100

Of the surveyed visitors to Mon Repos, 19% (excluding locals) would have reduced their stay within a 60 km radius of Bundaberg if there were no sea turtles in the area. 38% of respondents said they would have visited Bundaberg and not reduced their stay even in the absence of sea turtles. The percentage of non-responses was 43%. The number of reduced days in the Bundaberg area (within a 60 km radius) was 110 days at an average of 1.34 days for this group. There were 13 non-responses.

Sea turtle-based ecotourism at Mon Repos provides significant economic benefits to the Bundaberg region. If it were not for the presence of sea turtles at Mon Repos, the loss of income to the region (within a 60 km radius) would be close to a million Australian dollars a year[17]. The income generated is significant considering the short sea turtle season, the scarcity of the wildlife that is being viewed and the relatively low human population in the region. In addition, the surveyed respondents indicated that they were willing to pay higher entrance fees than those being currently charged. Apart from direct economic impacts, educational and conservation benefits are obtained from sea turtle ecotourism[18]. Conservation benefits include willingness of visitors to make increased financial contributions for the conservation of sea turtles visiting Australia to nest. Our survey provides evidence about such conservation impacts.

Increased willingness of tourists to contribute financially to sea turtle conservation following their visit

It is hypothesised that the experience of viewing sea turtles and/or hatchlings no doubt affects the visitors' attitudes to sea turtles and their conservation. Of those interviewed, a large number had observed sea turtles laying eggs and hatchlings emerging from their nests. Some respondents had seen both adult sea turtles as well as hatchlings. Less than 50 respondents saw no sea turtles or any hatchlings during the current visit. Figure 3 shows the number of surveyed visitors seeing sea turtles/hatchlings at Mon Repos.

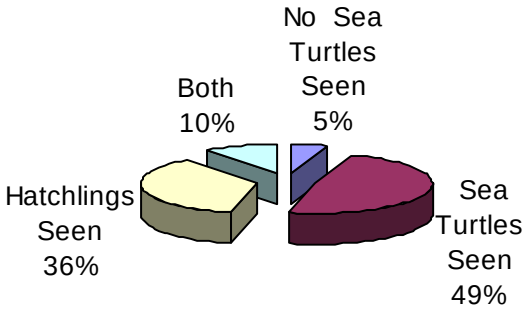

Figure 3. Number of visitors seeing sea turtles/ hatchlings at Mon Repos

The study showed that the sea turtle viewing experience had a positive influence on visitors' willingness to contribute money to sea turtle conservation. A considerable percentage of responding visitors (40%) said that their visit to Mon Repos will influence them to contribute more money for sea turtle conservation than before. 27% said they would contribute the same amount as prior to their visit to Mon Repos, whereas only 1% said they would contribute less. However, 32% did not answer this question. Figure 4 shows the number of respondents who were influenced by the Mon Repos experience to contribute money for sea turtle conservation. They were of the opinion that the experience at Mon Repos influenced them to make a contribution to sea turtle conservation in the future.

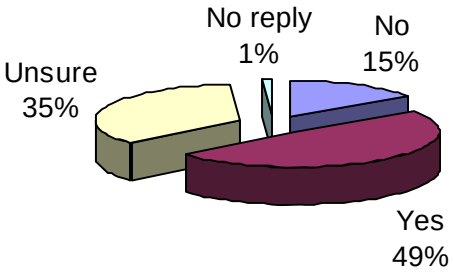

Figure 4. Influence of the Mon Repos experience to contribute money for sea turtle conservation

Contingent valuation by visitors – their willingness to pay for conservation of sea turtles

In order to determine how much money visitors were willing to pay for sea turtle conservation in Australia, the study adopted the contingent valuation approach. The questions were based on the dichotomous choice model where Yes/No responses were elicited to several questions in relation to visitors' willingness to pay to protect sea turtles that come to nest in Australia. The final contingent valuation question was an open-ended one were the respondents were asked the maximum amount per week they were willing to pay to protect sea turtles that come to nest in Australia for the next 10 years (see Appendix 1 for further information on the contingent valuation questions that were asked for this study). The respondents were told that in order to protect sea turtles money will have to be raised by the government. They were told that the questions are being asked to determine how much individuals are willing to pay for sea turtle conservation and not to raise money for Mon Repos and that this is only one of many environmental issues which may cost money that may have to come from family budget. Of the 519 usable survey forms used in the analysis, 374 respondents answered this question. 285 Australians answered this question while 29 did not. Although this question was optional to foreigners, 89 answered, while 116 did not. Out of the respondents who answered the valuation question, there were 71 zero bids (63 Australians and 8 foreigners) and 33 protest bids (25 Australian and 8 foreigners). Out of the 71 zero bids, 25 Australians and 6 foreigners gave reasons for doing so. The reasons are given in Table 3.

Table 3. Reasons for zero bids

Reason	Number
Contribute to other charities	09
Unemployed	03
Pensioner	05
Cannot afford	13
Student	01
Total (25 Australians and 6 foreigners)	31

It is clear that the reasons for giving zero bids were because the 31 (8%) respondents had other commitments such as making contributions to other charities, being unemployed, pensioners, students or because their present income was insufficient to make a contribution

to sea turtle conservation. A distinction can be made between those who give zero bids and protest bids. Protest bids are given in order to protest against voluntary payment. Some of the reasons for respondents to give protest bids in the study were because they were already paying taxes and were of the view that the government should pay for conservation.

Those who gave non-zero bids (268) were willing to pay Aus $2.49 on average a week, to protect sea turtles in Australia. When the 71 zero bids are included, the average amount the visitors were willing to pay was Aus $1.97 dollars per week. The breakdown for Australians and foreigners is shown in Table 4.

Table 4. Average weekly willingness to pay to protect sea turtles in Australia

Group	Aus $
Australians and Foreigners combined (with zeros)	1.97
Australians and Foreigners combined (without zeros)	2.49
Australians (with zeros)	2.15
Australians (without zeros)	2.43
Foreigners (with zeros)	2.53
Foreigners (without zeros)	2.67

On average, foreigners were willing to pay a slightly higher figure for sea turtle conservation than Australians. This may be due to the favourable exchange rate enjoyed by many foreign visitors to Australia at the time of the survey, especially those from the U.K and North America. For example, Australians (when zero bids were included) were willing to pay Aus $2.15 a week while foreigners (when zero bids were included) were willing to pay Aus $2.53 a week. Australians (without zero bids) were willing to pay Aus $2.43, while foreigners (without zero bids) were willing to pay Aus $2.67 a week. It can be inferred that the visitors to Mon Repos for the 1999/2000 season involved in sea turtle viewing would be prepared to pay at least Aus $250,000 per year to protect sea turtles in Australia. When this is combined with the willingness to pay by turtle watchers from previous years plus the willingness of some non-visitors to pay for protection of turtles, considerable collective economic value is clearly placed on the conservation of Australian marine turtles. This can also be expected to translate into political support for government programmes for the conservation of marine turtles.

Factors influencing the amount visitors are willing to pay for sea turtle-based conservation

It is useful to determine the probable factors that influence visitors' willingness to pay for sea turtle conservation, especially with regard to raising money for conservation purposes. Once the relevant factors are identified it is then possible to target them to obtain the best possible results. These factors could also imply the conservation awareness of visitors to *in situ* conservation sites. In order to do this a Tobit regression analysis was carried out using the field survey data. For the regression analysis 330 observations are used. The protest bids were excluded from the sample as recommended and so were the other variables that had missing data[19]. A Tobit analysis is used because it is the more theoretically appropriate method for willingness to pay data sets[20]. The data were transformed into square roots and the diagnostic tests showed no problems with heteroscedasticity (see Appendix 2 for diagnostic tests). The dependent variable is the contingent valuation willingness to pay bids to protect sea turtles visiting Australia to nest.

Table 5. Regression results of the contingent valuation willingness to pay bids to protect sea turtles that come to nest in Australia

Independent Variable	Coefficient	Standard Error	T Ratio
Respondents' educational qualifications	0.334	0.135	2.484****
Respondents' income	0.233	0.962	2.418****
Seeing sea turtles/hatchlings	0.299	0.226	1.331*
Donations made at Mon Repos for sea turtle conservation	0.267	0.111	2.422****
Influence of the Mon Repos experience	0.173	0.129	1.327*
Constant	0.615	0.408	1.509(-)*

The asterisks **** and * indicate 1, 2.5, 5 and 10% level of significance respectively for a one tailed test.
71 observations at zero
259 non-zero observations
n = 330

The results shown in Table 5 suggest that the respondents' level of education, income, seeing sea turtles or hatchlings, donations made at Mon Repos for sea turtle conservation and the Mon Repos experience are factors that influence the willingness to pay to protect sea turtles that come to nest in Australia. The regression results are consistent with the hypothesis that the better educated, higher incomes, seeing adult turtles or hatchlings, donations made at Mon

Repos for sea turtle conservation and the Mon Repos experience are factors that influence the willingness to pay bids to protect sea turtles that come to nest in Australia.

From Table 5, it can be seen that level of educational qualifications are the most important influence (coefficient 0.344) on willingness to pay to protect the turtles followed by income (coefficient 0.233). The T-ratio for both variables is highly significant. Both variables are liable to be correlated but not perfectly so. Note also whether or not visitors saw marine turtles was of importance for willingness to pay (coefficient almost 0.3) although the level of significance was only 10 per cent. There was much less apparent impact from whether or not visitors expressed satisfaction or dissatisfaction with their Mon Repos' experience. This provides some indication that increased support for wildlife conservation following a tourist visit depends upon whether or not the wildlife is seen.

Change in attitudes and actions of visitors to turtle conservation following their visit

Apart from possible positive impacts of ecotourism on willingness of tourists to contribute financially to conservation of species (in this case marine turtles), ecotourism can result in tourists developing more positive attitudes to the conservation of species and their willingness to take actions (additional to greater financial contributions) to conserve species. This is clear from the Mon Repos study.

As a result of the first hand encounters of visitors with sea turtles and/or hatchlings, the task of demonstrating the plight of sea turtles and the threats facing them may become more effective. Data collected from the survey revealed that the majority of respondents (98%) were convinced that more action should be taken to minimize threats to sea turtles (Figure 5). It was revealed that the desire to protect sea turtles increased after visiting Mon Repos. The reasons cited included: sea turtles are unique (90%), because they are ancient (66%), recreational value (32%) and they can generate income (23%). It was also found that after the visitors' experience at Mon Repos, they were likely to report the sighting of sick turtles (66%), injured sea turtles (66%), poaching or mistreatment of sea turtles (88%).

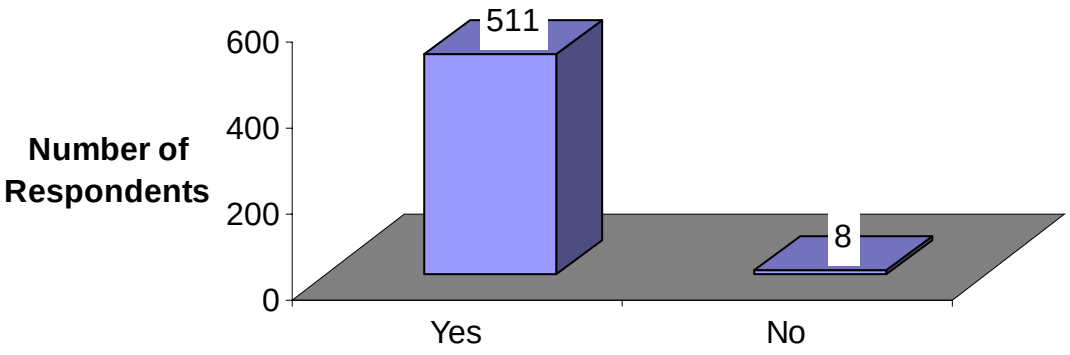

Figure 5. Number of respondents who were convinced that more action should be taken to minimize threats to sea turtles after their experience at Mon Repos

Furthermore, it was revealed that sea turtle viewing was a very satisfying experience and the majority of respondents (85%) wanted to return to Mon Repos. The large recreational surplus confirms the satisfaction that was gained from viewing sea turtles at Mon Repos[21]. Furthermore, a high proportion of respondents (98%) said that they would talk to their friends and relatives about their turtle-watching experience at Mon Repos, and presumably recommend a visit to them.

Apart from the above mentioned benefits, there are potential benefits to be derived from sea turtle viewing at Mon Repos. Many visitors indicated their desire to subscribe to a newsletter with updates on the conservation work carried out at Mon Repos and elsewhere with regard to sea turtles. Some respondents indicated the need to form a 'friends of sea turtles' group that could be involved in conservation work. Support from such a group can be effective in promoting the message of conservation. A good example is the Royal Society for the Protection of Birds (RSPB) in Britain which started as a small group and today it has grown to over a million members. It is now one of the main influential conservation pressure groups in Britain. RSPB also influences conservation decision making in Europe. Respondents also indicated their desire to have more access to material on sea turtles, current threats to sea turtles in Australia and elsewhere and the conservation measures undertaken.

Sea turtle viewing also raises the possibility of introducing a scheme whereby sea turtles can be adopted by the public in return for a donation. Updates can be provided to sponsors whenever information is available. With sea turtle tagging and monitoring taking place, the

provision of information to those adopting sea turtles becomes possible, although the time taken between information provided may be long.

While economic benefits are useful to generate political support, the education imparted can in turn aid conservation. For example the survey revealed that many visitors learnt about their threats to sea turtles and their biology for the first time because of the experience at Mon Repos. The sea turtle viewing program and associated museum display and presentations increased the knowledge of visitors about threats to sea turtles such as sea turtles being harvested for consumption (56%), collecting of eggs for consumption (52%), threats from prawn trawlers (64%), entanglement in crab pots (55%), boats strikes (60%), fox/wild pig predation (59%), natural predators [(e.g. goannas (45%)], natural diseases (37%) and pollution of waterways (53%).

Knowledge gained at Mon Repos from presentations by rangers about the biology and conservation of marine turtles, as well as associated museum displays was most likely reinforced by visitors viewing sea turtles in their natural setting, and in some cases by touching the caripace of a sea turtle when signalled to do so by the QPWS ranger-in-charge. This direct or hands on experience of visitors with turtles helped to create empathy for them. Thus most ecotourists involved in turtle watching at Mon Repos increased their support for conservation of marine turtles as a result of their total experience.

Concluding comments

As just indicated, educational and interpretative facilities plus the experience of seeing turtles in a natural setting at Mon Repos have been shown to be very effective in increasing the willingness of tourists to pay for the conservation of sea turtles, in strengthening pro-conservation attitudes towards the protection of sea turtles and in encouraging tourists to take positive actions to help conserve marine turtles. Wildlife-based ecotourism managed in a similar manner can be expected to have similar consequences. It is interesting to observe that willingness to pay to conserve sea turtles as judged by contingent valuation analysis tends to increase as the probability of seeing marine turtles rises. Conversely a decline in this probability should have the opposite consequence. Thus, as mentioned by Tisdell and Wilson[22] support for conservation of species is related to their populations. If the population of a species declines below a critical threshold, social support for conservation of the species may decline. At least this appears to be so for support generated via the ecotouristic factor.

In conclusion, this study indicates that the whole package involved in the ecotouristic experience plays a positive role in building support for wildlife conservation. This package cannot be easily duplicated in aquaria, zoos and museums because the latter all involve some artificiality. They are to some extent synthetic, though they have valuable educational and interpretive features, and can play a positive role in promoting conservation ideals. One suspects, however, that their pro-conservation impact on tourists/visitors is likely to be less than in the case of ecotourism based on non-captured species. But this hypothesis has yet to be tested.

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APPENDIX 1: Contingent Valuation Questions from the Survey

Conserving sea turtles costs money. In order to meet the costs of conservation, money will have to be raised by the government (Please bear in mind that this is only one of many environmental issues which may cost you money and that this may have to come from your/family budget). These questions are being asked to determine how much individuals are willing to pay for sea turtle conservation and not to raise money for Mon Repos.

8.1 Would you be willing to have your take-home income reduced by $2 dollars a week, that is $100 per year, for the next ten years to protect sea turtles that come to nest in Australia?

Yes ☐ No ☐ If No, go to Q.8.3

8.2 What if the cost of protecting sea turtles turned out to be higher, would you be willing to have your take-home income reduced by $5 dollars a week, that is $250 per year, for the next ten years to protect sea turtles that come to nest in Australia?

Yes ☐ No ☐

8.3 If the cost of protecting sea turtles turned out to be lower than indicated above, would you be willing to have your income reduced by $1 dollar a week, that is $50 per year, for the next ten years?

Yes ☐ No ☐

If No, what are the reasons 1. …… 2. …… 3……

8.4 In order to protect sea turtles that come to nest in Australia what is the **maximum** amount you would be willing to pay per week for the next ten years? (Please bear in mind that this is only one of many environmental issues which may cost you money and that this may have to come from your/family budget).

$……. dollars a week

APPENDIX 2: Diagnostic tests for the regression data

Test Statistics	LM Version	F Version
A: Serial Correlation	CHSQ(1)= 1.1802[.277]	F(1,324)= 1.1594[.282]
B: Functional Form	CHSQ(1)= 1.6392[.200]	F(1,324)= 1.6125[.205]
C: Normality	CHSQ(2)= 2.1742[.337]	Not applicable
D: Heteroscedasticity	CHSQ(1)= .018899[.891]	F(1,329)= .018786[.891]

A: Lagrange multiplier test of residual serial correlation
B: Ramsey's RESET test using the sqare of the fitted values
C: Based on a test of skewness and kurtosis of residuals
D: Based on the regression of squared residuals on squared fitted values

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