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Ecotourism Experiences Promoting Conservation and Changing Economic Values: The Case of Mon Repos Turtles

by

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Clem Tisdell[2]

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[1] Draft of a contribution to Roy Ballantyne and Jan Packer (eds.) (forthcoming) *The International Handbook of Ecotourism*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar.

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Ecotourism Experiences Promoting Conservation and Changing Economic Values: The Case of Mon Repos Turtles

ABSTRACT

Each year during the turtle watching season, Mon Repos turtle rookery in Queensland attracts many ecotourists interested in seeing sea turtles nesting or hatching. As part of their visit, visitors are able to learn about the biology of and threats to marine turtles. A sample of visitors were surveyed in order to determine whether their experiences at Mon Repos changed their conservation attitudes and their intended behaviours for protecting sea turtles. Using these results, the role of environmental education in changing their attitudes and intended behaviours is analysed and is found to be an important influence. Nevertheless, it is argued that other factors (such as emotional effects) are also important (sometimes the most important ones) in altering conservation behaviours and attitudes. This is less well recognised in the economics and ecotourism literature than it should be. The results from the survey summarised here are based on statements from respondents obtained soon after their ecotouristic experience at Mon Repos. There is therefore, likely to be a gap between the intended behaviours stated by respondents and their realised behaviours. Various types of hypothetical bias may be present, and a drop-off or decay effect is also likely to occur which also involves a bias. This effect creates difficulties for the application of contingent valuation methodology as well as from other forms of stated preferences elicitation of economic values. Simple mathematical models can be used to predict how individuals are likely to change their conservation behaviours as their information about the characteristics of environmental goods (in this case wildlife species) is altered. However, allowing for the conservation consequences of emotional experiences seems to be more challenging. In concluding, it is also pointed out that the conservation consequences of ecotourism do not depend solely on its generation of favourable behaviours among ecotourists. Furthermore, for reasons identified, ecotourism has serious limitations as a means for conserving wild biodiversity and needs to be supplemented by other means.

Keywords: Biodiversity conservation, contingent valuation, drop-off effect, ecotourism, environmental education, hypothetical bias, stated preference methods, turtles, wildlife conservation.

1. Introduction

Ecotourism is credited with promoting the conservation of wildlife species in several ways. One is that it fosters pro-conservation behaviour among ecotourists and increases their economic valuation of those wildlife species which are the focus of ecotourism, particularly as a result of the educational content of such tourism. The purpose of this chapter is to explore this point of view in the light of data collected from a survey of visitors to Mon Repos Conservation Park who came there to participate in the viewing of turtles nesting on Mon Repos Beach or their hatchlings emerging from those nests and making their way to the sea. The facility at the site is operated by the Queensland Parks and Wildlife Service.

During the turtle-watching season, visitors pay to enter the facility at this site, are provided with information about sea turtles and threats to their survival by a variety of means (e.g. posters, pamphlets, film) and are taken in groups by guides to watch nesting turtles or turtles hatching. The guides (accompanied by volunteers) provide information on the beach about processes being observed and scientific data is collected at the same time about the turtles being viewed. More information about the procedures involved can be found, for instance, in Tisdell and Wilson (2002).

The following matters are considered in turn in this chapter. After the nature of the survey is introduced briefly, the ways in which respondents stated that their experiences at Mon Repos had changed their intended (non-economic) conservation behaviours and their attitudes are outlined. Then attention is given to the changes reported by respondents in their relevant economic valuations affecting the conservation of sea turtles. This is followed by a critical discussion of the consequences for conservation of

the survey results and some additional observations are given on the role of ecotourism in promoting nature conservation.

2. The Survey and Stated Influences of Experiences at Mon Repos Turtle Hatchery in Changing the (Non-economic) Behaviours of Ecotourists

The survey of Tisdell and Wilson of visitors who came for turtle watching at Mon Repos Conservation Park (located not far from Bundaberg in Queensland) was conducted from December 1999 to the end of March 2000. This period corresponds approximately with the turtle-watching season at this location. About 15 questionnaires were distributed each day to different groups of visitors before they embarked on viewing turtles. A total of 1500 forms were distributed and 519 usable replies were received and therefore, the response rate was 43%. This is considered to be a relatively high response rate (Jakobsson and Dragun, 1996). Respondents could leave their completed questionnaires (completed after viewing turtles, or after trying to do so) with rangers or volunteers at the Mon Repos Information Centre or they could return them in a post-paid envelope to the Department of Economics at The University of Queensland.

Further information about the survey, background information about Mon Repos turtles and general aspects such as visitors socio-economic profiles can be found in Tisdell and Wilson (2002). Here it is only intended to report and discuss information relevant to the purpose of this chapter.

One of the attributes of ecotourism thought to be important by some authors is that it should be educational. Of the 519 respondents to the survey of Tisdell and Wilson, 514 (99%) said that their experience at Mon Repos based on turtles was educational, while the small remainder claimed that it was not. Furthermore, almost a third (31%) of respondents said that they learnt for the first time about threats to sea turtles and about their biology and a further 54% said that they had gained additional information about these aspects as a result of their visit. Therefore, 84% of respondents found their experience at Mon Repos to be educational. However, 14% stated that they learnt nothing new and 1% did not respond to the relevant question. Overall, the ecotourism programme at Mon Repos was shown to have a high educational content.

When asked whether their experience at Mon Repos had convinced them of the urgency of taking action to conserve marine turtles in Australia, 87% responded that it had. The distribution of the responses of those surveyed is shown in Table 1. Furthermore, nearly all respondents (98%) said following their experience that more should be done to reduce threats to sea turtles.

Table 1 Distribution of responses of surveyed ecotourists to the question of whether their visit to Mon Repos convinced them of the urgency of taking action to conserve sea turtles in Australia and elsewhere

Response	Per cent of respondent
Yes	87
No	5
Unsure	5
Not applicable	3
	100

A list of threats to sea turtles was presented to respondents and they were asked if they had become more informed about each of these individual threats. Their responses are summarised in Table 2. Note that the list of possible threats presented to respondents is not exhaustive.

Table 2 Relative frequencies with which respondents said that they had become more informed about the listed threats to turtles as a result of their visit to Mon Repos

Type of threat	Per cent of respondents stating they are better informed about these
Threats from prawn trawlers	64
Boat strikes	60
Fox/wild pig predators	59
Harvesting for meat	56
Entanglement in crab pots	55
Pollution of waterways	53
Collection of eggs for consumption	52
Natural predators e.g. goannas	45
Natural diseases	37

Respondents were also asked whether their experiences at Mon Repos would influence them to be more careful about their future behaviour likely to affect the conservation of turtles. A set of particular behaviours was listed and respondents could indicate their intentions for each type of behaviour. The set of behaviours and the percentage of respondents indicating that they would take more care with these individual behaviours are listed in Table 3. Indications are that substantial changes occurred in the intended behaviours of the ecotourists as a result of their experience at Mon Repos.

Table 3 Percentage of respondents stating that their experience at Mon Repos will result in them being more careful about the actions listed

Behaviour	Per cent of respondents intending to be more careful
Using beaches where sea turtles nest	75
Refraining from buying/consuming turtle products while overseas	73
Switching off lights near beaches	68
Disposing of plastics	62
Care with fishing gear	47

In addition to the above, respondents were asked whether given their experience at Mon Repos, they are likely to report the sighting of sick or injured turtles or the poaching and mistreatment of sea turtles. The majority of respondents said 'yes' for each of these events. The highest response was for the likelihood of reporting the poaching or mistreatment of sea turtles (88%), followed by reporting sick turtles (66%) and injured sea turtles (61%). This indicates a high propensity to want to report such events following visits to Mon Repos.

Respondents were questioned about whether their increased desire to protect sea turtles following their visit to Mon Repos occurred because marine turtles have one or more of the following attributes: (1) are unique, (2) are ancient, (3) have recreational value, or (4) can generate income. More than one attribute could be mentioned. The distribution of responses is shown in Table 4. Their uniqueness and being an ancient form of life topped the list whereas their recreational value and their ability to generate income were at the bottom of the list. The frequencies with which the latter attributes were mentioned were much lower than for the former ones. It can be concluded that economic reasons were not the main ones motivating the ecotourists surveyed to want to conserve sea turtles, even though economic impacts are likely to be important considerations for local communities.

Table 4 Per cent of respondents identifying listed attributes of sea turtles as influences on their increased desire to protect sea turtles following their visit to Mon Repos

Attributes	Percentage of respondents influenced
Unique	90
Ancient	66
Of recreational value	32
Generates income	23

3. Influences on Economic Values of Ecotourists' Experiences at Mon Repos

Apart from favourably altering the conservation behaviour of ecotourists, ecotourist experiences are widely believed to increase the economic value which tourists place on the conservation of nature, especially nature which attracts such tourism. One indicator of this are statements of ecotourists about their increased willingness to contribute financially to conservation causes following their ecotourist experiences. With this in mind, those surveyed at Mon Repos turtle rookery were asked whether their visit to Mon Repos will influence them to contribute more money than before for sea turtle conservation. They were given the option of answering 'Yes', 'No' or 'Unsure'. The distribution of responses is summarised in Table 5.

Table 5 Distribution of responses of ecotourists surveyed at Mon Repos about whether their turtle experience will influence them to donate more than previously to the conservation of sea turtles

Response	Percentage of respondents
Yes	59
Unsure	35
No	15
No reply	1

Despite the high educational content of the experience at Mon Repos supporting the conservation of sea turtles and the fact that the vast majority of visitors surveyed were very satisfied with their visit to Mon Repos to see turtles, a half of those sampled said that they would either not contribute more money than before for turtle conservation or that they were unsure about doing so. On the other hand, 49 per cent of respondents stated that they would be influenced to contribute more money than previously towards the conservation of sea turtles. The extent of which these pro-conservation intentions would be subsequently acted on was not determined, but this issue is discussed later. It is possible that stated intentions would be realised in only a fraction of these cases.

The contingent valuation method (CVM) is one of the methods (a stated preference method) used by economists to measure the economic value placed by individuals on the conservation of species, nature and other environmental commodities for which markets are missing or incomplete. In most cases, this involves eliciting from individuals their willingness to pay to conserve focal commodities, for example, particular wildlife species or natural areas. It is well known that this procedure is subject to several limitations, including hypothetical bias. Hypothetical bias is present when the willingness to pay values elicited from respondents differs from the amounts they are *actually* willing to pay (Murphy *et al.*, 2005). Some of the reasons for such bias are discussed below. It might, however, be noted here that sums individuals say they are willing to pay for conservation of an environmental feature are usually biased upwards if these values are elicited very *soon* after a favourable experience with this feature. A consequence of this is that CVM analysis undertaken soon after ecotourists have had a favourable experience with nature is likely to exaggerate the economic support which their experience actually generates for the conservation of the nature which was observed.

Estimates were elicited from those surveyed at Mon Repos of the maximum amount they would be willing to pay weekly for the next ten years to protect sea turtles in Australia (for details see Tisdell and Wilson, 2002). Australians (in the sample), on average, stated that they would contribute $A2.15 weekly. This would amount to $A111.80 annually; $A1,115 over a ten-year period. Can these figures be used as an indicator of how much economic value the turtle-watchers surveyed place on protecting sea turtles in Australia? Would in fact these stated values be followed up by actual donations of a similar amount to sea turtle conservation in Australia? As discussed below, there are some grounds for being sceptical about the extent to which these valuations can be expected to be translated into practice. This is so despite the fact that the experiences of the vast majority of visitors watching turtles at Mon Repos enhanced their appreciation of the importance of increasing efforts to conserve sea turtles.

It is also interesting to consider reasons given by those who said they are unwilling (unable) to contribute any money to the conservation of sea turtles in Australia. The most common reason given was that they could not afford to contribute (see Table 6). In

fact, it could be inferred from Table 6 that bout two-thirds of those who said they would not contribute money for sea turtle conservation in Australia had low incomes. The remainder said that they contribute to other charities; which presumably means that they put a higher priority on contributing to those than to turtle conservation.

Table 6 Frequency of reasons given by turtle-watching respondents for stating that they would contribute no funds to sea turtle conservation in Australia

Reason	Frequency
Cannot afford	13
Contribute to other charities	9
Pensioner	5
Unemployed	3
Student	1
	31

A number of respondents also objected to the proposal that based on their willingness to pay for sea turtle conservation in Australia, there should be a regular deduction from their income in order to translate their willingness to pay into practice. They could give reasons for not wanting to have their income regularly reduced to pay for this conservation. The reasons given are listed in Table 7. About half the reasons (16) given by respondents for objecting to individual financial payments for sea turtle conservation in Australia imply that such conservation is a government responsibility rather than a private one.

About a third (10) of those protesting, favour support for other causes. In four cases, respondents objected to being required (voluntarily) to ‘pledge’ to contribute money to turtle conservation. In a couple of cases, respondents thought that it was enough to pay the entrance fees and in one case there was clearly no empathy with the plight of nature at all.

Table 7 Frequency of reasons given by Mon Repos respondents for protesting about a regular personal financial commitment to contribute to sea turtle conservation in Australia

Reason	Frequency	
Government is responsible		
Paying taxes	7	
Government should provide protection	4	
Reduce government waste and pay for protection	4	
Lobby MPs	1	
Subtotal		16
Favour other causes		
There are other more important causes	4	
Too many animal causes	6	
Subtotal		10
Miscellaneous		
Voluntary donations preferred	4	
Have paid entrance fee	2	
Nature can take care of itself	1	
Subtotal		7
Total		33

While it is important to note the nature of the reasons for offering no money to conserve sea turtles and for objecting to being asked to make a personal financial contribution to the conservation of sea turtles, it should be remembered that it was only a minority who said they would not contribute to the conservation of turtles or who objected to personal private payments for the purpose. Nevertheless, about a half of respondents said that following their visit to Mon Repos that they would not increase their donations for turtle conservation or were unsure about whether they would do so.

4. Discussion of the Results from the Survey

Influence of cognitive and emotional experiences or support for conservation

Much of the available literature on ecotourism stresses the importance of education as a means for fostering support for nature conservation. In other words, it focuses on the role of cognitive (or educational) experiences of tourists as a means for building support for conservation (see, for example, Fishbein and Manfredo, 1992; Kimmel, 1999;

Mercado and Lassoie, 2002, p. 268). Tisdell and Wilson (2005) analysed the responses of ecotourists surveyed at Mon Repos to assess the educational influence. It was found using binomial logit analysis that the sampled ecotourists were more likely to state that their desire to protect sea turtles increased following their visit to Mon Repos if they reported their visit to Mon Repos to be educational. This effect was strengthened if they saw adult sea turtles or their hatchlings. Both these variables were highly significant statistically (significant at the 1% level). However, the marginal effect on the probability of a respondents stating that their desire to protect turtles had increased was somewhat higher for the seeing of turtles than for their reporting their visit to Mon Repos to be educational.

Furthermore, using binomial logit analysis both these factors were found to have a positive impact on the likelihood of respondents saying that they would report sightings of such sea turtles but in this case, the statistical significance of these influences was lower, namely significant at the 5% level.

Tobit statistical analysis of the Mon Repos results also revealed that the probability of respondents saying that they would contribute funds for the protection of sea turtles in Australia increased if they stated that their visit to Mon Repos had been educational. It also rose with their level of education and their level of income. While seeing sea turtles had a positive effect on the probability of respondents indicating their willingness to contribute funds for the protection of sea turtles in Australia, the statistical significance of the relationship in this case was low. Nevertheless, this analysis (as a whole) indicates that seeing turtles and being educated about them at Mon Repos were important factors in altering the stated preferences and proposed conservation behaviours of the tourists surveyed.

Those who saw turtles at Mon Repos had a more active experience with them than visitors who did not see them. In many cases, they were also, permitted to touch the carapace of adult turtles at the appropriate time. The above finding about the consequences for pro-conservation behaviours of seeing turtles lends some support to the findings of Swanagan (2000) that active experiences with wildlife (such as touching the trunks of elephants) can be more powerful in building pro-conservation attitudes

than purely passive experiences. Ballantyne *et al*. (2011, p. 1250) came to the conclusion after analysing relevant empirical data that 'tourism managers can optimise the long-term impact of a wildlife tourism experience by encouraging visitors to emotionally connect with animals they are observing, respond thoughtfully to the threats facing these animals, reflect on these ideas and discuss them with their companions". They, therefore, found emotional factors to be an important influence on conservation behaviours of tourists.

Active experiences with wildlife are likely to promote empathy with them, and complement the support for conserving them generated by learning about them. However, it should also be kept in mind that individuals differ in the relative extent to which their behaviours are altered by emotional and cognitive (educational) experiences. For example, some are much more influenced by emotional factors than by learning and vice versa (see, for example, Tisdell and Wilson, 2002, Ch. 6). Therefore, this needs to be taken into account in designing conservation policies

This raises some awkward issues. For example, if for some tourists their direct interactions with wildlife species (such as feeding animals) are more powerful in gaining their support for conserving this wildlife than is the provision of information about the wildlife, to what extent should these direct interactions be allowed? To what extent should they be permitted even when these human-animal interactions have some negative impacts on the animals involved? While some conservationists would claim that such interactions should not be allowed at all, they can (depending on the circumstances) be a positive force for conservation, as is pointed out in Tisdell and Wilson (2012, Ch. 6).

Tisdell and Wilson (2012, Chs. 6-8) also find considerable differences in the *receptivity* of visitors to protected areas to the provision of information about wildlife in these areas. This limits the cope for influencing the conservation behaviours of visitors by means of education.

The drop-off or decay effect and hypothetical bias

In the Mon Repos turtle survey of Tisdell and Wilson (2002), changes in proposed conservation behaviours and economic values were elicited from ecotourists shortly after their experience with turtles. However, it seems likely that the magnitude of the stated (and actual) pro-conservation effects can be predicted to drop-off or decay as time goes by and the ecotouristic experiences of respondents increasingly slip into the past. Ballantyne and Packer (2011) find evidence for such a drop-off effect and suggest means for its amelioration. Tisdell *et al.* (2008) discuss the dynamics of such decay in relation to contingent valuation and attribute it largely to psychological factors and bounded rationality.

Economists generally refer to the fact that the stated willingness of individuals to pay for the conservation of an environmental commodity (as for example, elicited by contingent valuation methods) generally exceeds actual payments as involving hypothetical bias (Arrow *et al.*, 1993). Various reasons have been given for such a bias in stated valuations. These include the following:

1. The stated commitments are not binding on respondents and therefore, are not considered seriously by them in reporting their intentions;

2. A 'warm-glow' effect may be present in the answers of the respondents and may reflect moral satisfaction, that is what the respondent would like to do morally but which they will not or cannot do entirely;

3. The respondent may want to give an answer that seems to be socially responsible (a social influence); and

4. The design of the survey instrument may prompt an upward bias in stated intentions of respondents to adopt particular pro-conservation behaviours.

However, the dynamics of upward lines in contingent valuation have been little explored by economists. Even if none of the above mentioned factors are important, a drop-off or decay in stated conservation intentions and behaviours may still occur. In

other words, even if the intended conservation behaviours and economic values of respondents are stated genuinely when they are surveyed, these are liable to alter subsequently for psychological reasons. Both forgetting and crowding out may be involved (Tisdell *et al.*, 2008). New experiences tend to crowd out the memories of the old ones and consequently, the influences of older experiences on later behaviour tend to be reduced.

Visits by tourists to see (and possibly interact) with wildlife and learn about it are often experiential commodities. The tourists' previous experience with and knowledge of these species is, as a rule, limited and in some cases, virtually zero. They therefore, often learn about particular attributes or threats to the focal species for the first time or add to their existing information about these. Ways in which this information can alter the stated (and actual) preferences of individuals for conserving species is modelled in Tisdell (2007) who also notes that such experiences may entice tourists to search subsequently and independently for further information about the focal species following their earlier experience with it. Consequently, conservation valuations and behaviours may alter not only as a result of initial passive learning activities and emotional experiences but may also alter as a result of subsequent active independent searching for information by tourists. The extent to which this happens would be worth empirical investigation.

One approach to how information about a wildlife species might change the conservation behaviour of tourists is to suppose that the probability of a tourist adopting (or wishing to adopt) a pro-conservation action or type of behaviour in relation to a particular species is a function of the amount of information obtained by the tourist about its attributes or characteristics, other things being held constant. If y_i represents the probability of an ecotourist adopting (or wanting to adopt) an action i to protect a focal species, and if x_j (j = …… n) indicates the amount of knowledge that the ecotourist has about the individual attributes (1, …….. 2) of the species, then the relationship

$$y_i = f_i\,(x_1, x_2, \ldots\ldots\ldots, x_n)$$

might apply. Lancaster (1966) used a similar characteristics approach to specify the preferences of consumers for economic commodities. It is possible that greater knowledge of some attributes ('good' qualities) of the species in this set will increase the likelihood of the tourist adopting pro-conservation action *i* but knowledge about other attributes ('bad' qualities) can decrease the probability. Consequently, the pro-conservation consequences of the provision of information about species is sensitive to the array of information provided to the recipient.

In the above model, only alterations in information change behaviour. However, it might be that some experiences alter the functional form itself. One of the several limitations of this model is that it does not allow for the consequences of emotional experience. Highly emotional experiences may result in larger impacts of information on actual or proposed conservation behaviours than less emotional ones. Therefore, modelling of these relationships needs to be developed further.

5. Additional Considerations

The consequences of ecotourism for the conservation of wildlife species depend not only on changes in the conservation attitudes, behaviours and economic values of tourists generated by their ecotouristic experiences. Local social support for ecotourism is often essential for its long-term sustainability. One contribution to such support can be the involvement of locals in the management of ecotourism either on a voluntary basis or to earn income from their employment. Payments may also be received by landholders for allowing ecotourists to access their properties to view wildlife. In addition, scientists and conservation groups can be effective political lobbyists. They were, for example, influential in the establishment at the Conservation Park at Mon Repos (see Tisdell and Wilson, 2012, Ch. 9).

Furthermore, in most instances (but not all) on-site payments associated with ecotourism usually only represent a small fraction of the total economic benefits obtained by local economies from this tourism. For example, it was estimated that the first round (primary) expenditure generated by the Mon Repos rookery in the Bundaberg region was at least ten times greater than the revenue obtained from entrance

fees to the rookery (Tisdell and Wilson, 2002). This takes account of the extra local expenditure of ecotourists intending to view sea turtles at Mon Repos on accommodation, food and so on in the Bundaberg region.

While all these positive conservation effects are important, one cannot rely on ecotourism alone to conserve wild biodiversity optimally. Reasons for this include the following:

1. Species favoured by ecotourists are likely to be charismatic species or to have some special qualities of interest to tourists, for example, are dangerous, as in the case of saltwater crocodiles used for tourism in the Northern Territory of Australia.

2. Some species utilised for ecotourism are not endangered nor vulnerable to extinction globally. In such cases, ecotourism is not essential for conserving global biodiversity. This is so in the case of the fairy penguin. However, this ecotourism may prevent local extinction of the species concerned or their maybe a spillover effect favouring the conservation of other species.

3. Often the area in which ecotourism is conducted is too small to support a minimum viable population of the focal species or too small to make a significant contribution to the survival of the focal species. In such cases, the overall effectiveness of ecotourism conducted at such sites depends on its bolstering support for the conservation of the focal species at additional sites. Its contribution to conservation depends on spillover effects. Such spillover effects can include political lobbying to protect the focal species on a wide scale as well as changed behaviours by ecotourists in other areas where the focal species is present. For example, most ecotourists surveyed at Mon Repos said that they would adopt conservation friendly behaviours when visiting other areas where turtles are present. However, the extent to which this will actually happen has not been determined.

6. Conclusions

The ecotourism study conducted at Mon Repos by Tisdell and Wilson (2002) found that the experiences of those surveyed developed intended pro-conservation behaviours in respondents and increased their stated support for the protection of sea turtles, including their willingness to pay for their conservation. However, the responses of those surveyed were elicited not long after their favourable ecotouristic experience with sea turtles at Mon Repos. It is likely therefore, that there was an elevation in pro-conservation responses. With the passage of time a drop-off or decay effect is likely. The adoption of behaviours favourable to sea turtle conservation are likely to weaken and the economic value placed on their conservation by respondents can be expected to decline as their ecotouristic experiences fade into the past. Consequently, actual behaviours of respondents are likely to increasingly fall short of their original intended or stated changes in pro-conservation behaviours as time passes. This also implies that contingent valuation payments are time-dependent. Although economists have given considerable attention to the presence of hypothetical bias in contingent valuation and have identified several factors that may contribute to it, they do not seem to have captured the essence of the drop-off effect arising from the influences on behaviour of psychological factors and bounded rationality.

There is evidence that both cognitive (educational) factors and emotional elements (such as arise from direct interaction with nature) play a significant role in developing pro-conservation behaviours and sustaining them. This is evident, for example, from the work of Ballantyne *et al*. (2011). It seems also that different individuals vary in the dependence on cognitive and emotional experiences for developing empathy with nature and their pro-conservation attributes. Therefore, it is not only the educational content of ecotourism which can be an important factor in developing pro-conservation behaviours but also emotional factors. Insufficient account is taken of the role of emotions in some analyses of the potential of ecotourism to promote conservation.

Although ecotourism (or more generally nature tourism) can play a positive role in promoting biodiversity conservation, it should not be relied on solely for this purpose. As shown, it is not free from biases in favouring selected species for conservation and it

also has other conservation limitations. Even though ecotourism is not a perfect means for increasing biodiversity conservation, it nevertheless helps to conserve some biodiversity which would otherwise be lost forever.

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