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RECREATIONAL SERVICES VALUATION OF ASIATIC ELEPHANTS IN DEVELOPING COUNTRIES: A CASE STUDY OF RAJAJI NATIONAL PARK, INDIA

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ABSTRACT

National parks are considered as the means of recreation services to a wide section of people, while protecting forest ecosystems. Quantifying recreational services of national parks is vital for park development and sustainable management. This paper attempts to quantify recreational services and examine the payment behavior of visitors of Rajaji National Park, Uttarakhand, India. Data were collected during 2011 through a visitor survey, and the travel cost method was applied to estimate annual recreational value. Recreational value of the park for 2010-11 was estimated to be approximately US$3.4 million of which the consumer surplus was approximately US$2.8 million, indicating the high social value. It is estimated that if tourist-related amenities are improved the recreational value would increase by about 39%. Coefficients of visit demand determinants have their expected signs and interestingly income and age of visitor are not statistically significant. The study indicates the need for smart investment option for maintaining ecosystem services and biodiversity conservation.

Key words : Ecosystem investment, Ecotourism, Park management, TCM.

Introduction

The value of ecosystems is immense and it is reported that on annual basis the worldwide ecosystems provide services to mankind to the tune of at least US$33 trillion (Constanza *et al*., 1997). Of these ecosystems, forests are the most valuable terrestrial ecosystem that provides services which cannot effectively be replaced by modern technology (Pattaknayak and Burty, 2005). Worldwide, over 100,000 protected areas have been created, covering over 12% world's surface area (WWF, 2010). Protected areas provide opportunities for rural development and rational use of marginal land, generating income and creating jobs, research monitoring, conservation education and recreation and tourism activities (CBD, 2001). The sustainably managed protected areas can yield continuously a wide range of direct and indirect economic benefits to human populations (Munasinghe and McNeely, 1994; Phillips, 1998) and can have the potential to make a considerable contribution to local economies in developing countries (Benavides and Perez-Ducy, 2001). India has a large number of protected areas for *in situ* conservation. According to World Bank (2010), protected areas of India in 2008 occupied nearly 6.21% of total surface area of country with terrestrial share of 4.77% and marine share of 1.46%. Three 'biodiversity hot-spots' out of 25 across the world are located in India, these being the Himalayan region, Indo-Burma Himalayas and Western Ghats (Mandal, 2003). These parks are in normaly funded by government for the support of manpower and other resources. In some cases, revenue has been generated through entrance fees, taxes and donations, though these contributions are meager.

Rajaji National Park (RNP) is a favorite destination in India for nature-based tourism, due to the presence of Asian elephant (*Elephas maximus*). Because of its rapidly declining population, Asian elephant has been listed since 1973 as an endangered species under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The current Asian elephant population of the world is estimated to be between 20,000 to 25,000 (WWF, 2014). While this elephant is regarded as a valued resource either for its use or non-use economic value by a wide variety of people, many local farmers view elephants as a major threat to their livelihood and consider them to be an agricultural pest (Bandara and Tisdell, 2003). While conservationists and politicians applaud the recent growth of Botswana's elephant population, farmers and residents of northern Botswana struggle to live with elephants that destroy crops and threaten livelihoods. The state's response has been to implement a narrowly applied compensation policy that reinforces government control over wildlife while communities affected by so-called human–elephant conflict demand increased rights to deal with the problem themselves. In this way, elephants represent contested ground between the state and local communities that can only be fully understood

The estimated aggregate consumer surplus and the recreational value of Rajaji National Park for 2009-10 were valued at ` 15 million and ` 18 respectively.

by considering the experiences and views of those who live with them as well as the national policy context in which management decisions are made. This article focuses on the hidden costs of attempting to live with elephants, framing this struggle as contestation over ownership of elephants in a political context that is increasingly focused on generating tourism revenues and expanding conservation territories (DeMotts and Hoon, 2012).

Due to presence of Asian elephants, RNP has an importance for tourists and recreation choices of many people. Nevertheless, despite the success of recreational purpose of RNP, the utility and social profitability of the park are still being debated. Policy-makers and managers of the forest park are interested in estimating the social benefits gained from the park. The few studies carried out on RNP to date have focused on estimating the financial benefits from income and employment, rather than the wider social welfare and contribution for wildlife conservation. This paper attempts to estimate the recreational use value of RNP as a habitat for Asian elephants.

Review of studies on the Economic value of Elephants in Protected Forest Areas

Revealed preference methods or stated preference methods are commonly used estimate the recreational use value of protected areas. The chief virtue of revealed preference methods is that they measure the use value of a resource from the actual consumer expenditures (Boter *et al*., 2005). When revealed market data are unavailable or incomplete; researchers employ the 'stated preference' approach that relies on hypothetical market situations. One of the main advantages of the stated preference techniques is that they can capture the values that are not revealed in actual markets. The 'contingent valuation method' a stated preference method, has been widely used to estimate the incremental economic value with respect to a change in the level of environmental service flows of an unpriced natural resource. The TCM as a 'revealed preference' method requires a survey of visitors to provide information on travel costs, socio-economic characteristics (e.g. age, gender, income) and purpose of the visit. The TCM leads to estimate the trip generation function, which can be used to estimate the aggregate demand curve for visits to the site. The demand curve can provide a basis for placing an economic value on wildlife at the site, if wildlife is a prime attraction (Loomis, 2000).

Despite the huge potential of tourism and recreation through natural resources, only a few non-market valuation studies have been conducted in India. Hadker *et al*. (1995) estimated the WTP of the residents of Mumbai for the maintenance and preservation of the Borivli National Park (BNP) through CVM. Chopra (1997, 1998) uses TCM and multi-criteria approach for evaluation of Bharatpur National Park and Keoladeo National Park, Rajasthan, respectively by developing semi-log demand function for estimation of the consumer surplus. Using TCM Mitra (2003) tried to estimate the recreational value of selected tourist sites of Arunachal Pradesh. The recreation benefit enjoyed by the visitors at Cherrapunjee, Meghalaya is estimated through TCM and CVM.

Study area

RNP is situated along the foothills and upland areas of the Shiwalik ranges, between Latitude 29^0 56'40' to 30^0 20' North and Longitude 77^0 54' 30'to 79^0 80' East, at elevation 250–1100 m with a spread of 820.42 km^2. The park is spread over the three districts of Uttrakhand, namely Dehradun (23,678 ha), Haridwar (33,356 ha) and Pauri (25,008 ha) (Fig. 1). RNP is designated as a reserved area for the 'Project Elephant' by the Indian government with the aim of maintaining a viable population of Asian elephants in their natural habitat (Joshi, 2010). RNP is having vegetation of several distinct zones and forest types including riverine, broadleaf, chirpine forest (dominated by chir pine), scrub land and grassy pasture land (Joshi, 2010). The park provides habitat for an impressive array of animals and plant species. According to the working plan, there are 23 species of mammals, including tigers, leopards, elephants, deer, jungle cats, wild boars and sloth bears, and also 315 species of birds.

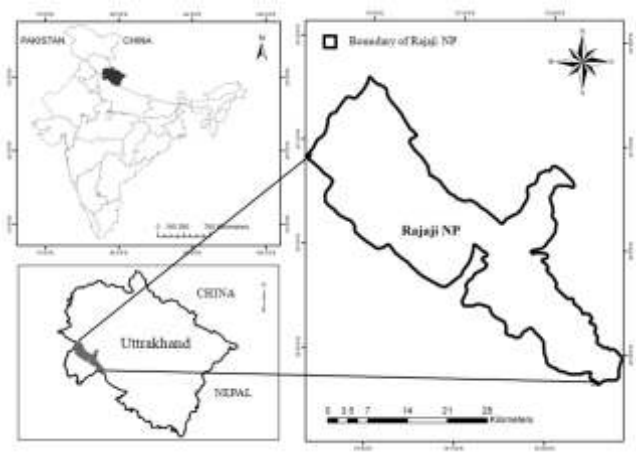

Fig. 1: Location of Rajaji National Park

The RNP is open for tourists as eco-tourism from mid-November to mid-June with permission of entry during down and dust, (6-9 am) and (3-5 pm) because during this time visitors get maximum enjoyment of sighting of wildlife, and closed during the rest period and for the remainder of the year for the visitors due to arrival

of monsoon and also breeding season of the most of the wildlife. As per unofficial observation, about 60% visitors visit the park during mid March to mid June and the proportion of foreign visitors is limited to 5% of total visitors during the period.

The adjoining villages of the park have witnessed the human-wildlife conflict, especially with elephants leading to some casualties of humans and livestock. Elephants in groups approach the farm fields of nearby villages in search of feed during the cultivation period of sugarcane, rice and wheat. Several times, such mass movements of elephants lead severe losses of crops. These incidents are currently in increasing trends during the recent past showing the poor management of the park administration.

Contrary to the conflict, the conservation of the wildlife particularly Asian elephants in RNP is crucial for park management and the economy of local villages due to the importance of cash flow being RNP an ecotourism destination. The villagers get direct benefits through the tourism related activities.

The number of visitors to the national park per annum has steadily increased from about 6000 in 2000–2001 to about 19,000 in 2009–2010 (Rajaji National Park, 2011).

Material and Methods

The individual travel cost method (ITCM) was used to estimate the value of recreational benefits generated by the park. The ITCM does not require data about zonal visitor rates because the method uses the individual's annual number of visits to a site being valued as the dependent variable. From the viewpoint of statistics, in contrast to the zonal travel cost method (ZTCM), the ITCM has the advantage that a smaller number of observations are required to estimate the model function (Garrod and Willis, 1999). In addition, the ITCM makes it possible to incorporate the socio-economic characteristics (e.g. income, age) of individual visitors, which are expected to be significant explanatory variables of recreation demand models (Bateman, 1993)

The recreation demand model takes the following form:

$$V_i = f(TC_i, TT_i, S_i)$$

Where

V_i = the number of visits to RNP made by the i^{th} individual during a given period;,

TC_i = the travel cost incurred by the i^{th} individual for visiting RNP;

TT_i = the time cost incurred by the i^{th} individual when visiting RNP; and

S_i = the socio-economic characteristics of visitor *i*.

This ITCM model relates the number of visits to the national park by individuals to their travel costs and socio-economic characteristics of the individual respondents. Travel costs include transportation costs, entry fees and on-site expenditures. The visitor characteristics are represented by a wide range of socio-economic variables.

This study estimated four demand functions (i.e. linear, semi-log dependent, semi-log independent and log-log). The linear functional form of recreational demand implies finite park visitation at zero cost and has a critical cost above which the model predicts negative park visitation whereas the log-linear (i.e. semi-log dependent) functional form implies a finite number of visits at zero cost and never predicts negative visits even at very high travel costs. Economic theory does not support any particular form of function for TCM (Garrod and Willis, 1999). The selection of the best-fit model is based on the magnitude of the estimated R^2 statistic. The consumer surplus for an individual making one visit (The per-person-per-trip value; the average per-trip value) to RNP can be derived from (-1/b) where b denotes the estimated coefficient of logTC (Garrod and Willis, 1999). The aggregate per-trip value for RNP can be extrapolated from multiplying the per-person-per-trip value by the annual number of visits to the site.

Questionnaire design and data collection

A TCM questionnaire was designed for face-to-face interviews with visitors to RNP. The respondents are asked how much distance in km and time in hours or day has spent at RNP. They have been also asked that how many times they have visited RNP in the last five years at the time of the survey. For practical and estimation purposes, the responses to this question are converted into visitation frequency per annum as the dependent variable of the ITCM model for this study. The respondents are asked to reveal how much they have spent to gain access to RNP. They are informed that the travel cost is defined as the sum of transportation costs, accommodation costs and on-site expenditures as well as entry fees. The entry fee was ` 150 per person for Indians and ` 600 for foreigners. The vehicle entry fee was ` 500. The questionnaire contains some questions to collect individual socio-economic characteristics including household income, education, age, marital status and household size. In addition, the respondents are asked whether they are urban dweller or rural residents.

A questionnaire for park visitors was developed

and tested through interviews of 15 tourists visiting RNP at Chilla range in February and March, 2011. This identified potential pitfalls or misunderstandings in relation to services available in the park and broadened the scope of economic expenditure incurred for the purpose of the visit and led to modification of some questions. The main survey was conducted during the main park visitation months (March and April) in 2011, after obtaining the permission from the park authority. Data pertaining to visitors' recreational choices and attitudes towards entry fees were collected from a random sample of 64 tourists, including 46 individual visitors and 18 members of groups (visiting the park with family and friends). Fourteen questionnaires were sent through email, in response to visitors requests. A second survey was conducted, of other stakeholders including park administration, shopkeepers and drivers; these were interviewed informally to arrive at better understanding about the underlying issues of visitor's responses and park's services. The variables under consideration were evaluated for the non-response. The non-response for income was only for foreigners, who were generally having high income, as also noted during the discussions. Therefore, their income level was considered the maximum one i.e. ` 0.10 million/ month.

Results

A majority of the respondents were visiting the national park because of the presence of elephants and for bird watching. This means that the forest is not visited without the element of animals and birds. The RNP attracted a variety of visitors from all walks of life from middle to upper classes people during the survey period. The respondents of RNP were grouped into three categories local, national and international. National visitors were mainly from northern India. The proportion of foreigners was only 22%, and mainly from Portugal, Russia, Finland, France and England. Nearly 86% of respondents were male and rest of them was female, and nearly 86% were married. Approximately 39% of visitors were university graduates, and about 16% had higher degrees and rest was up to secondary level of education. The visitors had interest to visit the park and their surroundings for the joy and pleasure. Majority of visitors were part of the group, which has 4 to 6 members with either 2 or 3 members in case of foreigners.

The monthly income of the respondents ranged from Indian currency rupee (`) 30000 to ` 50000 for 26% visitors, ` 50000 to ` 100000 for 28% visitors and more than ` 100000 for 20% rest of them lies between ` 10000 to ` 20000. This itself shows that majority of visitors were from affluent classes. In responding quality of the RNP, 44% of respondent has replied that it is fair and 34% has said that it is good 16% has described it as poor and rest of them has said it is excellent. The mode of transportation depends on the distance end economic condition of the visitors but most of the local visitors opted for their own car.

Approximately 80% visitors agreed to pay higher against the existing entrée fee with improved services. The high paying is associated with the location of residence of visitors, and local people were the more willing to pay more per visit. This is probably due to the notion that presently the entry fee is much lower for them (Table 1).

The local and national respondents were ready to pay higher amount than the prevailing existing entry fee. Indian citizens were interested to pay approximately ` 300, however, foreigners were ready to pay ` 800. The all were put a condition of better facilities for higher entry fee (Table 2). They were also raised their concerned for better publicity measures through advertisements on audio visual systems.

The collected data were analyzed by using SPSS

Table 1: Proportion of the visitors choice for imposition of higher park entry fee

Imposition of higher fee	Location			Total number
	Local	National	International	
Yes	15	28	8	51
No	0	6	6	12
Total number	15	34	14	63

$\chi^2 = 8.72$ ($p<0.01$)

Table 2: Enhancement of entry fee as proposed by respondents (In `)

Area	Minimum	Maximum	Mean ±SE
Local	200	1000	297 ± 13.3
National	150	800	278±3.85
International	0	2000	785 ± 41.34

[1]Only a few visitors drive their own vehicle inside the park others use hired vehicle from the entry point of park. The hiring cost of vehicle is also included in the travel cost.

version 16 software. The data analysis included descriptive statistics in the form of frequency distributions, percentages, tabulations and analysis of association.

A wide range of socio-economic variables that may influence the travel behavior of individuals have been initially considered. However, only the variables used in other ITCM studies were selected to avoid data mining. The independent variables included in this paper are travel costs, education, age, household income and size of group. No correlation was higher than 0.63, which indicates that multicollinearity is not a problem within the collected data, and all considered variables could thus initially be included in the analysis. No monetary value has been made for travel time with the view that this is being taken care by the expenditure due to different time to reach the park. Four functional forms have been developed for estimation of number of visits in RNP.

The model 2 was selected keeping in view of model statistics. The model elaborate that with assuming other factors constant, the intended number of visit of RNP decreases by 0.000011 for every one rupee increase in the total travel cost. This is trivial, thus may be concluded that the number of visit would not be decreased in near future. The model explains 80% variability in the number of visit. As expected, the model clearly demonstrates that high travel costs incurred by individuals are inversely related to the park visitation rate. This implies that the higher the travel cost paid by visitors to reach the RNP, the less the frequency of their visits. This indicates that there is less demand to visit the park by those visitors who live far away from it compared to those who live close to the park.

The aggregate recreational value equals the consumer surplus plus the total cost incurred for the visit and reported in Table 3. Assuming other factor held constant, against the zero cost for travel, there will be no visit of the RNP. Moreover with increase in the entry fee by additional ` 50, ` 100 and ` 150 leads to change (reduction) in the visitation to the tune of 523, 1045 and 1568 visits per million. Based on the developed equation and as per defined methodology, the recreational value per visit per individual was estimated and reported in Table 4.

This is the value that the park yields every year for the economy and not accounted in the park revenue. This value is combined value of travel cost (opportunity cost of time spent on and off-site) and consumer surplus of visitors.

Considering that 60% visitors are coming in Park during March to June, the underestimated recreational value of RNP was ` 107 millions for 2009-10 and the value of the benefit was ` 89 millions that visitors gain by visiting the park.

Discussion

Based on that, the overestimated recreational value of RNP was ` 179 millions for 2009-10. This shows that the value of the benefit was ` 148 millions that visitors gain by visiting the park. The rest amount enters into the market economy i.e. cost of travel. This is the existence value (` 31 millions) of the park. Therefore, it can be concluded that the total value of the park is large in the context of social value.

What is important is that the estimated value is not only reflect the use value of the national park, but also contribution to the economy because goods and services

Table 3 : Estimation results of linear and non-linear TCM models

Parameter	Linear	Semi-log (dependent)	Semi-log (independent)	Log-log
Constant	-12.757**	-1.467	-20.812***	-29.636***
Travel cost	0.715***	0.946***	1.174***	1.302***
Income	0.689***	-3.064***	0.466***	2.062***
Education		0.217***		-0.103***
Group size			0.122***	0.120***
Purpose of visit			0.560***	0.784***
R^2	0.65	0.80	0.97	0.97

Note: Statistical significance for two-tailed tests is indicated by *** p <0.01, ** p<0.05 and * p<0.10; 'Number of visits' (V_i, that is, the dependent variable) is in natural log form in the semi-log model; 'Travel costs' (TC_i) is in natural log form in the semi-log (independent) model; Both V_i and TC_i are in natural log form in the log-log model.

Table 4 : Recreational value for RNP (in Rs, 2011)

Parameter	Actual expenditure	Consumer surplus	Total WTP
Per visit per individual	1637	7,863	9499

are purchased through the economy. Protected areas provide an opportunity for ecotourism (Maikuri *et al*., 2007), the extent of which varies with their potential to gain substantial revenue from tourists and tourism businesses and the ability of government to raise funds for park management (Ross and Wall, 1999; Font *et al*., 2004) and development of the area. Tourism in protected areas may have adverse effects on biodiversity and cause disturbance to wildlife (Candera and Ispas, 2009) but on the other hand may generate funds to help address wildlife conservation through effective management of the man-animal conflict (Joshi, 2010). Tourism can also facilitate protection of nature and culture through providing funding for nature management and assigning a direct economic value to the natural areas. This value may provide an incentive for local inhabitants and governments to protect and manage the nature (UNEP, 2005). From an economic perspective, management of resources in an efficient way requires information about the flow of benefits received and costs incurred, and valuation for recreational services can provide pathways in this direction (Mathieu *et al*., 2003).

RNP can attract tourists and these can help to generate, cash flow for the park and villages, which may facilitate effective management of the park. An increasing rate of tourism will further boost the park income and facilitate park management perspective such as improving infrastructure of the park as well increasing the quality of life of local villagers. These will assist for better forest management and thus improved forest and wildlife conservation by reducing dependency of the community on the forests, and also reduce animal movement towards habited areas.

The income generated by tourism may be further extended for compensation against the damage caused to the villagers due to the wildlife of park. The generated financial benefits from tourism in response to ecotourism destination of RNP by visiting the park, may enable for changing in attitude of the villagers with respect to the wildlife. Even the changing attitude of villagers may further assist for better strategy for management and conservation of the wildlife. The change in villager's attitude and effective wildlife management is essentially required as loss of property (livestock and arable produce) due to animal encroachment in farm areas can be catastrophic at household level, which will be further triggered the conflict in near future.

Economically efficient resource management requires knowledge of the flow of park benefits and costs, and valuations are available to estimate the benefits derived from the existence of the park (Mathieu *et al*., 2003). The existence of public benefits derived from a national park in the form of environmental amenities and ecosystem services implies that the park contributes to public welfare, and loss of the park or decline in park quality could result in a loss in welfare (Shah, 1995).

The RNP can generate greater funding for park conservation and sustainable use of recourses, besides the other purposes of its creation by imposing the realistic fee to visitors. However, in a developing country, and especially due to the global financial crisis, there is a very tight budgetary constraint on park funding, and recognition of the importance of outdoor nature-based recreation can promote greater park utilization and greater government support. The different interests in forest resources by various stakeholders may result in differences in perceived value of forest conservation.

This finding implies that the local communities had a higher valuation of forest conservation than the ecotourists. Many non-timber forest products such as fuel wood, craft materials, traditional medicine and forest foods are vital for the survival of local communities. In contrast to the local communities, the international ecotourists benefit from nature conservation within the tropics through recreational activities such as forest walks, biking, camping and wildlife watching (Robinson and Redford, 1991). Therefore, their perceptions of forest benefits may differ from those of the local communities living around the forest reserves. This could be because the local people are more dependent on the forest for their livelihoods than the ecotourists.

Conservation measures and the very purposes of creation of national parks are jeopardized by the limited ability of management to carry out the required critical tasks (Navrud and Mungatana, 1994; Baral *et al*., 2008). However, it has been observed that in spite of inadequate funding and cash-strapped management, protected areas are contributing to biodiversity conservation and community wellbeing (Leverington *et al*., 2010).

According to Binilkumar *et al*. (2006), there has been insufficient involvement of local communities and other stakeholders in planning, management and decision-making for park management, and social and economic issues of local people act as constraints for park development. These constraints on the effectiveness of achieving the purposes of park establishment are largely due to non-availability of scientifically estimated worth, as well as low visitation rates and poor infrastructural support to visitors. These force park management to set low entry fees and indirectly compromise Park facilities. This situation is

aggravated by the current global recession, with park funding curtailed proportionately with other sectors. Such encounters can be minimised by implementing various tailor-made programs for conservation and protection of park and wildlife with inclusion of the local communities.

Conclusion

The study reveals that most of the coefficients of the demand determinants have the expected trends in terms of direction, however income and age was statistically insignificant. Visitors' perceptions as to pay higher to preserve RNP, presence of solid waste management, better facility can significantly modify the number of visit. This analysis calls for RNP management to improve on the provision of waste disposal, better vehicle condition and suitable accommodation facility in the area, and ways to inform the visitors.

The estimated aggregate consumer surplus and the recreational value of RNP for 2009-10 were valued at ` 15 million and ` 18 millions respectively. The visitors' perception as to the presence of reliable tourist guides and porters and strict implementation of guidelines and procedures on the use of RNP can significantly increase the number of visit in RNP, as deduced by the visitors. This shows the recreational use value of RNP in terms of contribution to the public at large, and any changes in flow of services in the park, particularly the loss of biodiversity, will be detrimental to the flow of services to the community. Therefore, it should be treated as a public wealth and significant attention should be made for continuous supply of fund and other resources for management and maintance of the park, with provisions of development of park amenities to the public. This result may provide pathways to the authority for fixing the fee structure for optimizing the services vis-à-vis recreational services.

विकासशील देशों में एशियाई हाथियों के मनोरंजनात्मक सेवाओं का मूल्यांकन : राजाजी राष्टीय पार्क, भारत का एक केश अ्ययन

अजय कुमार गुप्ता, विनोद कुमार यादव एवं अमरेन्द्र भूषण

सारांश

राष्टीय पार्कों को वन पारितंत्रों को सुरक्षित करते हुए लोगों के एक व्यापक वर्ग के लिए मनोरंजन सेवाओं के मा्यम के रूप में समझा गया है। पार्क विकास तथा पोषणीय प्रबंधन के लिए राष्टीय पार्कों की मनोरंजनात्मक सेवाओं को बढ़ाना अहम है। इस शोधपत्र में राजाजी राष्टीय पार्क, उत्तराखण्ड, भारत के पर्यटकों के भुगतान व्यवहार की जांच तथा मनोरंजनात्मक सेवाओं का परिमाण बताने का प्रयास किया गया है। पर्यटक सर्वेक्षण के जरिए 2011 के दौरान आकड़े एकत्र किए गए तथा सालाना मनोरंजनात्मक मान का आकलन करने के लिए यात्रा लागत विधि प्रयुक्त की गई। 2010–11 के लिए पार्क का मनोरंजनात्मक मान लगभग यू एस डालर 3.4 मिलियन आकलित किया गया जिसमें से उपभोक्ता अधिशेष लगभग यू एस डालर 2.8 मिलियन था, जो उच्च सामाजिक मान को दर्शाता है। यह आकलित किया गया कि यदि पर्यटक संबंधी सुविधाओं का सुधार किया जाए तो मनोरंजनात्मक मान करीब 39 बढ़ेगा। भ्रमण माग निर्धारकों के गुणांकों का अपना प्रत्याशित संकेत है तथा पर्यटक की आयु एवं आय सांख्यिकीय रूप से महत्वपूर्ण नहीं है। यह अ्ययन पारितंत्र सेवाओं एवं जैवविविधता संरक्षण को पोषित करने हेतु निवेश विकल्पों की आवश्यकता की ओर इशारा करता है।

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