

## Visitor Survey of the Pinnawala Elephant Orphanage, Sri Lanka

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**Abstract.** Pinnawala Elephant Orphanage (PEO) is a captive elephant based recreation facility. The objective of this study was to gather baseline information for a visitor management plan through a questionnaire survey. The mean monthly number of visitors was 43,725, of which 72% were Sri Lankans. Peak visitation occurred in August and the lowest in November. More than 90% visited as groups. Most (91%) arrived by road. Observing juvenile elephants being bottle-fed was the most attractive experience. Almost all visitors indicated a desire to revisit, but only around 50% did. Nearly 80% were dissatisfied with the facilities provided. Safe structures for viewing elephants, information about elephants and better guidance to the facility, affordable restaurants and safe parking are suggested to enhance visitor experience.

### Introduction

The Pinnawala Elephant Orphanage (PEO) was established in 1975 by the Department of Wildlife Conservation (Lair 1997). The facility was primarily designed to provide care and protection to baby elephants orphaned in the wild. It was subsequently taken over by the Department of National Zoological Gardens in 1978 (DNZG 2000). The PEO continued to receive orphaned elephants till 1985 at which time the Elephant Transit Home was established in Udawalawe National Park by the Department of Wildlife Conservation to rehabilitate orphaned elephants and release them back to the wild (Fernando *et al.* 2011). Despite the fact that the PEO stopped receiving elephants from the wild, its elephant population has grown steadily over the years due to the success of its breeding program that has resulted in 69 births during the last three decades (Fernando *et al.* 2011). The captive breeding program of the PEO dates back to 1982 and the first baby elephant, Sukumalee was born in 1984 (Tilakaratne & Santiapillai 2002). It is recognized as one of the most successful captive breeding programs in Asia (Kurt & Endres 2008).

The PEO is located in Kegalle district, approximately 95 km from Colombo. It was setup in a 25 acre coconut land close to a river (Maha

Oya), with the aim of allowing the elephants free movement and association during the day, encouraging the development of a herd structure. They are provided access to the river twice a day, which plays an important part in their social activity.

Although initially established as an ex situ facility to tend orphaned elephants, the PEO has gradually changed its role into a world renowned captive breeding centre, tourism destination and a study site to conduct research on the biology, ecology and behaviour of captive elephants (Tilakaratne & Santiapillai 2002). Gunathilaka and Vieth (1998) demonstrated that both local people and local establishments derive large economic benefits due to the PEO's existence.

At present the PEO is exceeding its carrying capacity, especially on weekends and public holidays it gets overcrowded when large crowds visit the facility. Therefore, PEO must give due consideration to developing a visitor management plan to cope with growth in visitor numbers without decreasing the quality of the visitor experience. The first step in developing such a plan is to conduct a visitor survey to identify the type of visitors that frequent the facility as well as their perceptions. Even though the PEO has been in existence for more than three

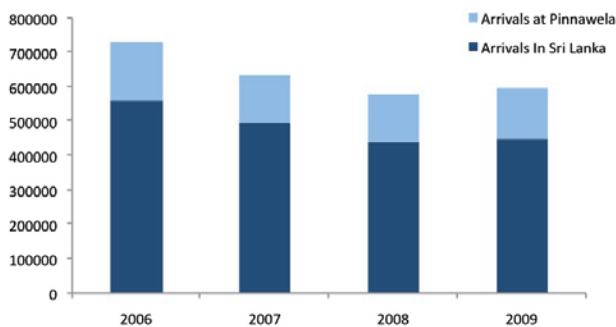
decades, only a single attempt has been made previously to identify visitor perceptions (Tisdell & Bandara 2003). Considering this deficiency, this study was undertaken with the objective of gathering baseline information necessary for the formulation of a visitor management plan for the PEO.

## Methodology

The study was conducted from 15<sup>th</sup> September 2009 to 20<sup>th</sup> December 2009. Visitation patterns from 2006 to 2009 were assessed based on data collected by the PEO.

A questionnaire was developed to capture the visitor profile, visitor perceptions and expectations. A separate questionnaire was administered to PEO staff to assess their perceptions. The visitor and staff questionnaires were developed and field tested on a smaller sample of visitors and PEO staff to assess the validity of the questions and modifications required. Then the questionnaire was administered to a sample of 545 Sri Lankan visitors, 45 foreign visitors and 55 staff members over a period of three months. This period included weekends, public holidays and weekdays to capture any temporal variations in response. The questionnaire was administered in the form of an interview survey to facilitate the respondents to articulate their views. For some of the questions, the respondents were allowed to provide multiple answers so that the responses to the question could be ranked.

During the period of study, the PEO was visited once a week and observations were recorded over a four hour period during each visit on visitor



**Figure 1.** Percentage of the tourists arriving in Sri Lanka that visited the PEO during the period 2006 to 2009 (SLTDA 2009).

behaviour, staff performance, constraints and short comings in visitor services, under different scenarios such as crowded days and times versus less crowded days and times etc.,

## Results and discussion

### Visitor composition

During the period 2006 to 2009 the PEO received around 520,000 visitors each year (Table 1). During this period, the mean monthly number of visitors that arrived at the PEO was  $43,725 \pm 3458$  (range 27,843 to 74,670), of which 72% were Sri Lankans. During the period considered, PEO was visited by 30% of the tourists that arrived in Sri Lanka (Fig. 1). This is a considerable change from what has been reported for the period 1993-2002 (Tisdell & Bandara 2003). According to their study, average number of visitors that arrived at PEO per month was 39,765 of which 97.3% were Sri Lankans. This indicates that both visitor numbers as well as the proportion of foreign visitors has increased between the two studies.

The reasons for increased number of visitors observed during 2006-2009 could have resulted due to the ceasefire that was in place during 2005-2007, which resulted in conditions conducive for tourists, both local and foreign. Whereas, the study by Tisdell and Bandara (2003) was conducted during a period during which there was armed conflict within the country, which discouraged people from travelling, especially foreign tourists. Tourist arrivals once again declined in 2008 due to the reinitiating of the war. The war culminated in May 2009. This once again resulted in an influx of tourists to Sri Lanka. According to projections of the Sri Lanka Tourism Development Authority, the number of tourists arriving in Sri Lanka is expected to reach 2.5 million per year within the next 10 years. Therefore, if we assume the current ratio of visitation to PEO, the number of foreign tourists will reach 0.75 million per year and together with Sri Lankan visitors, the number of visitors to the PEO may exceed 1 million annually.

When the mean monthly proportion of Sri Lankan to foreign visitors is considered, the Sri

**Table 1.** Number of annual visitors at the PEO.

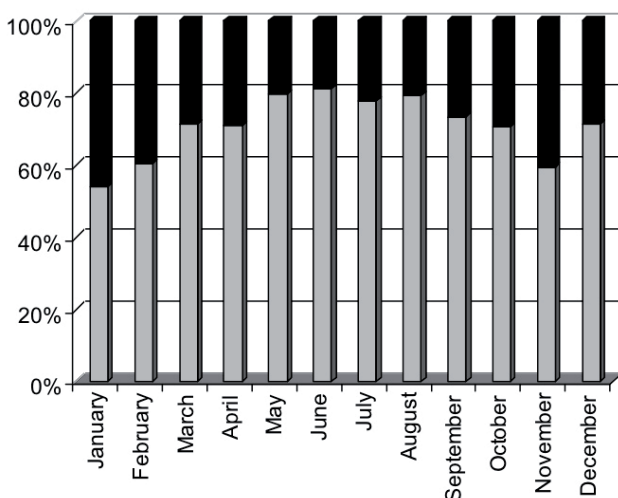
Year	Sri Lankans		Foreigners		Total
	Number	%	Number	%	
2006	359,348	68	167,364	32	526,712
2007	431,258	76	137,136	24	568,394
2008	336,017	71	138,068	29	474,085
2009	381,597	72	148,011	28	529,608
Mean	377,055	72	147,645	28	524,700

Lankan visitors make up a higher proportion of the visitors every month. A relatively high representation of foreign visitors was observed in the months of January, February November and December. In all other months foreign visitors represented less than 25% of the visitors arriving at PEO (Fig. 2).

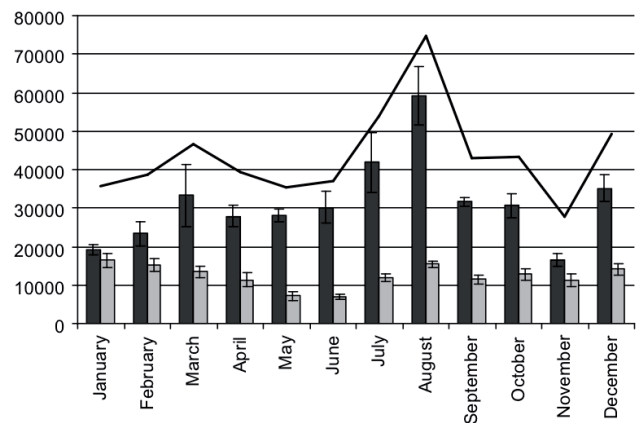
*Visitation pattern*

When all visitors are considered together, the peak visitation to PEO occurred during August followed by two minor peaks in December and March (Fig. 3). The lowest visitation occurred in November and May. Visiting patterns of Sri Lankans follow the overall pattern observed for PEO. However, among the foreign visitors the peak visitation occurred in January and reached a low in June and July. Tisdell and Bandara (2003) reported a single visitor peak in August and September.

The major visitor peak in August coincides with school holidays and the Esala Perahera held in Kandy, which attracts both Sri Lankan and



**Figure 2.** Portion of Sri Lankan (grey) and foreign (black) tourists that visit the PEO.



**Figure 3.** Mean monthly visitors at the PEO 2006-2009. Black = Sri Lankan, grey = foreigners.

foreign visitors to the area. The minor peak in December also coincides with school holidays. The peak of foreign visitors probably reflects the increase in tourist arrivals to Sri Lanka during the winter ‘tourist season’ from October to April.

More than 90% of the respondents visited PEO in groups. This observation is consistent with the results of Tisdell and Bandara (2003), where 84% of the visitors surveyed came in groups. Group size varied between 2 and 45. The commonest group sizes were 6-10 and 11-15 (Fig. 4).

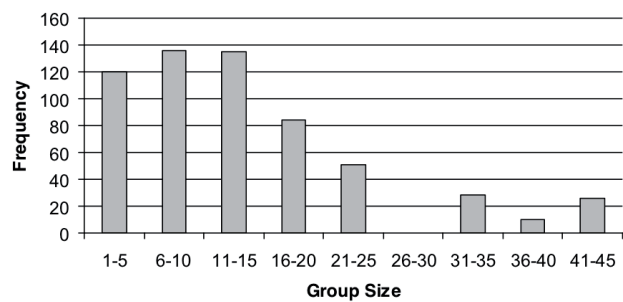
*Origin of visitors*

Sri Lankan visitors sampled came from 13 of the 25 districts. The highest representation (31%) was from Kegalle district, where the PEO is situated. A high number of visitors were also observed from Colombo (19%), Kandy (12%), Kurunegala (8%), Gampaha (6%) and Ratnapura (6%). These districts lie adjacent to the Kegalle district and have high population densities and a high proportion of people with a higher socio economic status which makes it possible for them to spend more time on leisure activities (Table 2). The results of the present study are comparable to the visitation pattern reported by Tisdell and Bandara (2003) except for Kegalle, Kandy and Nuwara Eliya Districts. This indicates that there has been a slight change in the visitation pattern of Sri Lankan tourists between the two studies. One of the reasons for this could be the smaller sample size used by Tisdell and Bandara compared to the present study that could have influenced the final outcome of the study.

The foreign visitors that responded to the questionnaire came from three countries, Germany (51%), Holland (25%) and United Kingdom (24%). However, these numbers are based on a small sample size (n=45) that may have given a skewed representation of the foreign visitors that come to Pinnawela. The foreign visitors in the Tisdell and Bandara (2003) study came from 14 countries. However, 60% of the foreign visitors in their study were from United Kingdom, Germany and Holland. This indicates that majority of the foreign visitors to Pinnawela come from these three countries. Therefore, when preparing interpretation material, consideration should be given to use German in addition to Sinhala, Tamil and English which are the three main languages used in Sri Lanka.

#### *Mode of arrival*

The PEO is located about 13 km from the Colombo-Kandy road. The Colombo-Kandy railway line passes close to the PEO and the nearest railway station is located 3 km from PEO. However, only 9% of visitors used the train to arrive at the PEO. The remaining 91% of the visitors arrived by road. Out of these, 25% used



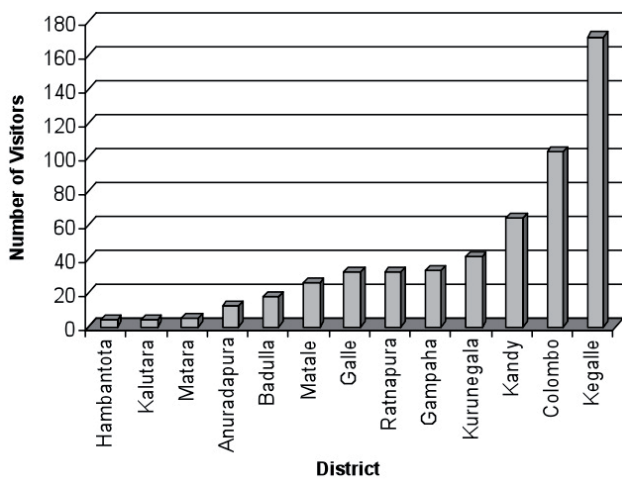
**Figure 4.** Group sizes observed among the visitors to PEO.

private cars, motorbikes and vans while 66% hired buses or coaches. This indicates that more than 90% of the people that visit PEO require safe parking facilities. At present there is only a single parking lot within the premises of PEO and another one maintained by the Rambukkana Pradeshiya Sabhawa (local authority). These two parking lots can hold up to 25 cars or vans and six tourist coaches at a given time. When these two parking lots are full, all others have to park on the roadside or parking provided by local households located near PEO. Parking on the roadside is unsafe and results in traffic congestion. Parking in local households is good as the surrounding community derives an economic benefit. However, as it is not regulated and

**Table 2.** Comparison of local visitation pattern recorded during the present study with the pattern reported by Tisdell and Bandara (2003).

District	% Visitors		Population	% Poor households	Travel distance [km]
	2009 <sup>a</sup>	2003 <sup>b</sup>			
Kegalle	31	5	823,000	9.0	12
Colombo	19	19	2,584,000	2.5	88
Kandy	12	23	1,447,000	8.3	45
Kurunegala	8	11	1,577,000	8.6	92
Gampaha	6	7	2,191,000	3.0	80
Ratnapura	6	6	1,139,000	8.5	115
Galle	6	2	1,096,000	7.9	210
Matale	5	9	504,000	9.3	76
Badulla	3	0	897,000	10.9	208
Anuradhapura	2	1	840,000	4.6	165
Matara	1	1	847,000	8.3	250
Kalutara	1	2	1,144,000	4.1	136
Hambantota	1	0	576,000	5.4	239
Nuwara Eliya	0	13	768,000	7.1	115
Puttalam	0	1	789,000	7.5	131

<sup>a</sup>Results of the present study (n = 545); <sup>b</sup>Results of Tisdell and Bandara (2003, n = 145).

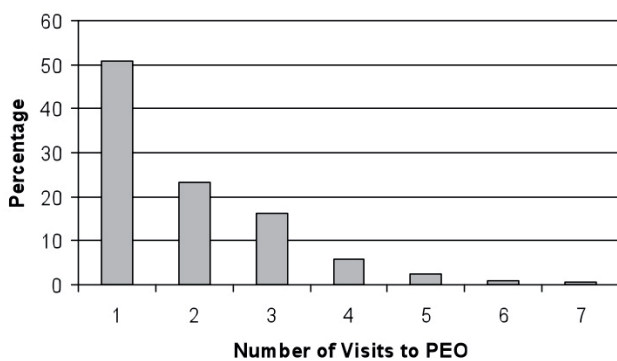


**Figure 5.** District wise distribution of Sri Lankans in the visitor survey.

people charge whatever they feel like charging, it leads to abuse. It could be done in a better way by the PEO introducing a licensing system that will ensure that visitors are not ripped off while ensuring safety standards for parking. During the peak visitor months of January, March, August and December as well as on long weekends parking becomes a major problem. Therefore, providing safe parking facilities can be identified as a priority need for the PEO.

#### *Repeat visitation*

Approximately 50% of both Sri Lankan and foreign visitors sampled were first time visitors while the remaining 50% had visited the facility before (Fig. 6). Tisdell and Bandara (2003) reported a repeat rate of 56% which indicates that the attractiveness of PEO has remained unchanged between the two studies. However, other than seeing elephants, the facility does not offer visitors any novel visitor experience



**Figure 6.** Number of times a respondent has been to PEO including the current visit.

that would be an incentive for a person to visit the facility again. Interestingly, more than 99% visitors expressed willingness to revisit the orphanage. However, the study shows that the actual number that comes back (around 50%) is far less than the potential, suggesting that changes in visitor experience are needed.

#### *Visitor experience*

Even though the Asian elephant is the only animal exhibited at PEO, it offers several visitor experiences based on the daily routine of elephants. These include viewing elephants that are free in an open area, juvenile elephants being bottle fed, elephants bathing in the river and elephants being herded from the free living area to and fro for bathing. The most attractive experience respondents had at the PEO was observing juvenile elephants being bottle fed (88%). Next in popularity was watching baby elephants (74%) followed by viewing elephants bathing (56%). The experience that received the lowest rank was observing elephants in the open free living area (38%).

Even though 56% of the respondents indicated that viewing elephants bathing in the river was a major attraction, the bathing area is located outside the PEO and facilities for the visitors to observe this activity are poor. Hotels and boutiques located on the riverfront offer facilities at a price. Other than that, visitors have to stand in a small congested area without any shade. Further, this area is highly eroded and sloping, therefore cannot be accessed easily, especially by elderly and disabled visitors. As a result the majority of visitors are deprived of properly enjoying this experience. Similarly, at the free living elephant area also the facilities provided for viewing are inadequate. Therefore, this is an aspect that needs to be given due consideration by the management.

#### *Identified shortcomings*

A majority of respondents (95%) identified the lack of information and guidance as a major shortcoming. Other shortcomings identified included lack of proper viewing facilities to

watch elephants bathing and in the free living area (78%), lack of restaurants and hotels that serve food at a reasonable price (73%) and the inability to get closer to elephants (62%). Some of the tourists give money to the mahouts who in turn allow these tourists to touch elephants as well as pose for pictures with the elephants. Most foreign visitors tend to do this while most Sri Lankan visitors cannot afford to do so therefore express their dissatisfaction at this preferential treatment received by the foreign visitors. Therefore a formal and regulated system that allows all to equally enjoy this facility without feeling left out would be an improvement. There are many such interactive facilities offered by foreign zoos that can be used as models and adapted to the PEO situation.

Many respondents (62%) identified the absence of a waste management as a major problem. Furthermore, inadequacy of toilet and drinking water facilities (42%) and lack of affordable hotels and restaurants inside the PEO (73%) were identified as major issues. The inadequacy of parking facilities (12%) and poor quality of the access road to PEO (2%) were the other deficiencies identified (respondents were allowed to provide multiple answers for this question).

#### *Value of experience*

The majority of respondents (80%) were of the opinion that they did not get their money's worth at PEO. This can be ascribed to the shortcomings identified above. Two thirds of the respondents identified improving viewing facilities at the bathing location (63%) and free ranging elephant exhibit (63%) as a means of improving visitor satisfaction. More than half the respondents (58%) felt that the entrance fee to PEO should be lowered for the general public and school children and 54% felt that charges for cameras and video camera use should be removed. The other suggestions for improving the PEO by the visitors included, increasing viewing ability of the bathing area and free ranging area, introducing awareness campaigns for school children (46%) and establishing affordable restaurants within the PEO (26%).

Visitor satisfaction is reflected by willingness to pay for a certain experience. Entrance fees to the PEO are different for Sri Lankan and foreign visitors where, a foreign visitor has to pay 20 times the amount paid by a Sri Lankan visitor (Rs. 100  $\approx$  1 US\$). Furthermore, an additional fee is charged from the visitors for using a camera or video camera. However, most mobile phones today are equipped with a camera that can take photographs as well as video clips, but are not subjected to the above rule which frustrated many visitors to the PEO. Therefore, this rule needs to be amended appropriately. Only 16% of the respondents expressed satisfaction for the money they paid while a small percentage of the respondents (2%) were of the opinion that it was worth more than what they paid.

However, Tisdell and Bandara (2003) reported that 72% of the respondents indicated willingness to pay more than what they paid. This difference in attitude can be attributed to the fact that entrance fees were much lower during their study period (Sri Lankan visitors had to pay Rs. 25 ( $\approx$  US\$ 0.30) while foreign visitors had to pay Rs. 200 ( $\approx$  US\$ 2.50). They further reported average willingness to pay values of Rs. 55 ( $\approx$  US\$ 0.70) and Rs. 739 ( $\approx$  US\$ 9.20) respectively for Sri Lankan and foreign visitors. The current rates being charged are much higher than the willingness to pay values expressed by visitors in the Tisdell and Bandara (2003) study. Therefore, this indicates that visitor attitudes have changed markedly over a period of four years with revision of the entrance fee. Willingness to pay is defined by the value people attribute to a certain product. Therefore, the management has two options, either to decrease the entrance fee or improve the quality of the visitor experiences and thereby increase the value of the product offered.

#### *Conservation*

The PEO is an ex situ conservation facility established for a globally threatened species, the Asian elephant. This study shows that the PEO, even though it attracts approximately 0.5 million visitors annually, has failed to make an impact in terms of conservation education or providing

a valuable visitor experience which is expected of such a facility. A major objective of an *ex situ* facility should be to create awareness among visitors of their subject and provide an opportunity for the visitor to learn about conservation while enjoying the exhibits. PEO does not provide any educational programs focused at improving visitor awareness on elephants or conservation issues even though there are several “Educational Officers” at the PEO. Furthermore, the visitors are not given any guidance about the layout of the facility. Only 10% of the respondents stated that their knowledge on Asian elephants improved after visiting PEO. Tisdell and Bandara (2003) reported that 17.3% of the respondents felt that their visit to PEO contributed to enhancing their knowledge on elephants. In the intervening years this aspect appears to have degraded even further.

Tisdell and Bandara, (2003) also reported that 93% of respondents expressed the desire to obtain more information on Asian Elephants during their visit. The majority of visitors in our study (93%) stated that a visitor centre would be the most useful and effective method of disseminating information. Brochures (74%) and interpretation sign boards (20%) placed in special areas such as bottle feeding and free ranging areas were the most preferred educational material by visitors. Other communication tools identified by visitors included posters (47%) and books (38%). Therefore, there is a great need to develop an educational program at the PEO. This can be best served by establishing a visitor centre and an interpretation plan.

#### *Visitor perceptions of animal care*

The PEO is a major tourist destination in Sri Lanka. Therefore, the tourist’s perception on how animals are being kept there is important. Many tourists (88%) were of the view that adult elephants at PEO did not receive sufficient food, since the elephants were constantly begging for food from the visitors and were trying to find food on the side of the road on their way to the bathing area or in the free ranging area. Further, 22% of the visitors were of the view that the baby elephants do not get enough milk as they kept on begging for more milk during bottle feeding

time. However, both of these opinions may have developed among the visitors due to the lack of understanding among the visitors about the food requirement of elephants as well as their feeding behaviour. This also shows the need for creating awareness among the visitors about elephants that can dispel erroneous perceptions they may entertain about Asian elephants.

Some of the respondents (39%) expressed displeasure at the excessive force used by mahouts to control elephants at times. The level of protection afforded to the elephants were also felt to be low (25%) as the elephants were not looked after closely while in the bathing area or the free ranging area by mahouts. Finally, 12% of the respondents felt that elephants do not have sufficient water for bathing and 7% has stated that elephants do not have sufficient water to drink when they are in the open grassland area. While some of these matters impinge on animal management at the facility and should be decided on technical knowledge rather than visitor perception, the results show that visitors see the PEO in a negative manner due to them. Therefore these perceptions should be addressed and any real issues corrected and others managed through visitor awareness.

#### *Perceptions of the staff members*

The success of any tourism destination also lies with the efficiency and courtesy of the staff, which in turn depends on staff satisfaction. All permanent staff members (n=115) expressed satisfaction with their job and working conditions. However, majority of the staff members (86%) identified the need for training related to elephants for them to perform their duties efficiently. Another group of respondents (49%) stated that they should be provided adequate opportunities to pursue higher education in related areas so that they will be better equipped to conduct their duties. Another training need identified was further education in administration and management (42%).

Many of the staff members (80%) identified unregulated disposal of garbage by the visitors as a major problem to maintain cleanliness of the facility. Another problem identified was visitors

coming too close to elephants and attempting to touch elephants or pose for photographs with elephants, which was considered stressful to the elephants as well as to undermine visitor safety (62%). Staff members (29%) also stated that some of the visitors make a lot of noise and behave in an unruly manner disturbing the elephants.

Improvements suggested by staff members included introduction of a education program for visitors to increase their awareness on Asian elephants (73%), the need to improve parking facilities and a traffic management plan (20%).

### Conclusions and recommendations

Based on the projected development in the tourism sector and establishment of a Zoological Garden at Pinnawela, the number of visitors to the PEO is likely to double by 2015. Even at present the PEO is exceeding its carrying capacity especially when large crowds visit the facility on weekends and public holidays. Therefore, managing the increase in visitors will be a major challenge.

The visitor facilities at the PEO have many inadequacies and if these are not addressed soon the value of the PEO as a tourist destination will go down. By improving visitor facilities the PEO can be converted to a high quality tourist product that can attract more tourists as well as increase the number of repeat tourists to the site. These improvements include; development of a visitor management plan for the PEO to enhance the carrying capacity; providing better guidance to visitors through strategically placed sign boards educating them on “Do’s and Do not’s” while at the site, site plan and daily routine; providing safe and comfortable viewing platforms near the elephant bathing area and free ranging area equipped with special access to both disabled and elderly people; establishing affordable restaurant(s) on site especially aimed at the Sri Lankan visitors; establishing a well designed visitor center at the orphanage with exhibits and other awareness material such as brochures, posters and booklets.

A similar set of actions were proposed by Rajaratne and Walker (2001) but was not given

sufficient consideration by the PEO management. Therefore, it is hoped that the management of the PEO will pay more attention to the recommendations made by this study as well as previous studies, made with the objective of converting the PEO to one of the leading Asian elephant exhibits in the world.

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