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Current Status of Asian Elephants in Sri Lanka

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Introduction

Sri Lanka holds an important position with regard to Asian elephant conservation. Well over 10% of the global Asian elephant population in less than 2% of elephant range (Leimgruber *et al*. 2003), makes Sri Lanka the range country with the highest density of elephants. It also has one of the highest human densities among range-countries. Therefore successes and failures in Sri Lanka can provide critical insights into mitigating human-elephant conflict (HEC) and conserving elephants. In addition Sri Lankan elephants are recognized as a distinct subspecies. Although genetic support for a sub-specific distinction is low, Sri Lanka has the highest genetic diversity of Asian elephants (Fernando *et al*. 2000; Fleisher *et al*. 2001).

Sri Lankans have a very close association with elephants that extends back millennia. Characterization of elephants such as the division into 'castes', and the management of captive elephants has been the subject of many ancient treatises (Jayewardene 1994; Wisumperuma 2004). Elephant motifs have been widely used in Sri Lankan art since ancient times (Wisumperuma 2004). They are a prominent feature of stone and wooden carvings, many fine examples of which can be found in the ancient cities of Sri Lanka such as Polonnaruwa, Anuradhapura and Kandy as well as contemporary places of worship (Fig. 1). In ancient history, captive elephants were heavily utilized for labour, war, and religious and cultural activities (Jayewardene 1994; Wisumperuma 2004). In more recent times their use as work animals has decreased drastically.

Elephants hold a central position in the country's two main religions Buddhism and Hinduism as well as in Sri Lankan culture. The elephant is considered a symbol of physical and mental strength, intelligence, responsibility, good luck and prosperity. Elephants are kept in a number of temples and feature prominently in annual pageants named 'peraheras' (Fig. 2). The most famous is held in August in the city of Kandy, which features up to a hundred richly caparisoned elephants festooned with lights, together with thousands of drummers, musicians, dancers, torch bearers etc. The highpoint of the Kandy perahera is the ceremonial exposition of the tooth relict of the Lord Buddha carried on the back of a majestic tusker of the highest 'caste'.

Elephants in Sri Lanka are protected under the Fauna and Flora Protection Ordinance and recent amendments to it makes taking the life of an elephant illegal under any circumstances. Catching or killing a wild elephant carries a fine

Figure 1. Painting at the anicent Reswehera temple in the Northwest.

of Rs. 150,000-500,000 (US$ 1400-4500) or imprisonment of 2-5 years or both. A national policy for the conservation and management of wild elephants was developed in 2006 (available online at: <www.dwc.gov.lk>) but has not yet been effectively implemented.

Wild elephants

Estimates of elephant numbers

Estimates for Sri Lanka have ranged from 1500 in 1951 (Norris 1959), 1600-2200 in 1969 (McKay 1973), 2000-4000 (Olivier 1978), 5000 in 1978 (Hoffmann 1978) to 2700-3200 in 1990 (Santiapillai & Jackson 1990). Most of these estimates were based on 'educated guesses'. Since 1994 the Department of Wildlife Conservation (DWC) has conducted a number of 'elephant censuses' by counting elephants at water holes in the dry season. The numbers derived from such counts have been 1967 countrywide in 1993 excluding the North (Hendavitharana *et al*. 1994); 1076 in the Northwest and part of the northern region in 2004; 2149 in the North-central region and part of the East in 2008; and 5879 in the entire island in 2011 (DWC data).

Past elephant distribution

Sri Lanka is an island of 65,000 km^2. The southwest quarter of the island known as the 'wet zone', receives rain throughout the year. The rest of Sri Lanka has seasonal rainfall and is known as the 'dry zone'. Central mountains rise up to about 2500 m. The natural vegetation is dry evergreen forest in the dry zone, rain forest in the wet zone and montane forest in the mountains.

Prior to human presence, most of the country was covered in mature forest and elephants probably inhabited the entire island. Elephant densities were likely in the range of 0.1-0.2 elephants/km^2 with a total of around 6,000-12,000 elephants. The advent of people and especially the rise of a 'hydraulic civilization' based on irrigated agriculture in the dry zone around 2500 years ago caused significant environmental changes and likely impacted elephant numbers and distribution profoundly. In the centres of civilization conversion of natural habitat to permanent cultivation and settlements would have excluded elephants entirely. However shifting cultivation and the construction of innumerable fresh water reservoirs for irrigated agriculture would have enriched the habitat for elephants, allowing higher densities in fringe areas. Large numbers of elephants were captured and domesticated for local use and export. With the rise and fall of kingdoms and shifting of centres of civilization, elephant populations would have alternately become locally extirpated and abundant (Fernando 2006b).

Figure 2. Elephants at the Nawam Maha perahera in Colombo.

The ancient civilization collapsed and the dry zone was largely abandoned around the 13th century. Prior to this, human presence in the wet zone was sparse and it would have been covered in mature forest. Elephants would have inhabited the entire area but at low densities. The biggest change in elephant distribution and numbers in the history of Sri Lanka probably occurred during the colonial period from the 1505 to 1948. During this period the wet zone became heavily settled and converted to commercial agriculture of coffee, tea, rubber and coconut. Elephants were declared vermin and many thousands were shot (Jayewardene 1994; Wisumperuma 2004), eliminating them from the wet zone. During this period, elephant densities and numbers would have increased in the dry zone due to the regenerating habitats and innumerable abandoned reservoirs.

Re-developing and re-populating the dry zone based on irrigated agriculture commenced in early 20th century with the construction of mega reservoirs, rehabilitation of ancient irrigation systems and resettlement of people, which gathered momentum with independence in 1948 and continues to date (Fernando 2006b).

Current elephant distribution

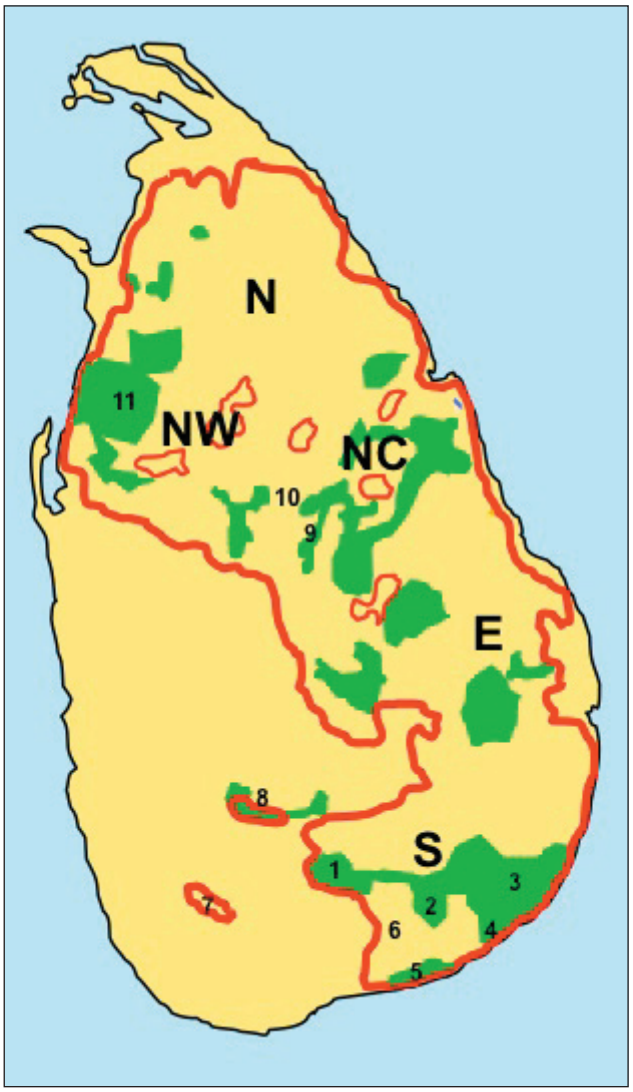

Figure 3. Current elephant distribution in Sri Lanka. Areas of distribution are demarcated by a heavy red line. Elephants are absent in polygons demarcated by a thin red line. Green polygons denote DWC protected areas. Numbers and letters indicate areas referred to in the text: N=North, NW=Northwest, NC=North-central, S=South, 1=Udawalawe NP, 2=Lunugamvehera NP, 3=Yala NP, 4=Yala NP Block I, 5=Bundala NP, 6=Mattala, 7=Sinharaja, 8=Adam's Peak, 9=Minneriya-Kaudulla NPs and Hurulu Reserve, 10=Kala Wewa, 11=Wilpattu NP.

Elephants are found over almost the entire dry zone in an area approximately 60% of the island (Fig. 3). Development activities have a major impact on elephant densities and distribution at a fine scale, with permanent settlements and cultivations excluding elephants entirely. However, given that their home ranges in Sri Lanka are 50-250 km^2 (Fernando *et al*. 2008a) elephants in Sri Lanka can still be considered a single contiguous population. It does not make sense to give exact elephant numbers for a particular park or administrative area given the many shortcomings of counts (Fernando 2008) and as elephant home ranges are not limited to such areas but overlap with adjacent areas. Elephants are also not limited to protected areas and higher densities are found outside where food and water is more plentiful. However, the best opportunities for observing them are in the national parks where animals are habituated to tourists.

South: Over a thousand elephants are present in the south. Elephant herds and males can easily be observed at all times of the day and year in the Udawalawe National Park. The presence of up to 20 adult males who are fed by people, lined up along the electric fence on the park boundary bordering a major road is a unique sight. Research based on individual identification estimated a population of 804-1160 elephants in the Udawalawe National Park at a density of 1.02-1.16 elephants/km^2 (de Silva *et al*. 2011). Other national parks (NP) in the area such as Yala, Lunugamvehera and Bundala also hold elephants. Based on individual identification, around 200 elephants use Yala Block I (Fernando unpublished data). However their home ranges are not limited to Block I but extend over adjacent areas. Based on individual identification and demographic assessment (Fernando *et al*. 2010, unpublished data), there are over 400 elephants in the Mattala area south of the Udawalawe NP which is contiguous with the Bundala NP and Wilmanne Sanctuary. Those elephants live mainly outside any protected area. The Mattala area has been identified as a 'Managed Elephant Range' where elephants will continue to remain and its implementation will be a landmark for elephant management in Sri Lanka.

East: Over a thousand elephants are found in the east. The majority are outside national parks. As a result of the armed conflict that took place in the area over the past three decades, many villages and cultivation areas were abandoned and became excellent elephant habitat. The post-war resettlement of people in the east is likely to result in a new area of high HEC.

North-central: The area contains well over 1000 elephants. The home ranges of most of them encompass both protected areas and areas outside. However, a large part of the 'outside' ranges also lie in state land under the Forest Department. The annual 'gathering' of over 400 elephants in the reservoir beds of Minneriya and Kaudulla to feed on lush grasses as the water recedes in the dry season has been termed one of the greatest animal wonders on earth (Lonely Planet 2011). These large herds can be observed during June-October. During the rest of the year they can be observed in the nearby Hurulu Forest Reserve and Eco-park.

Northwest: There are over a thousand elephants largely outside protected areas dispersed throughout the landscape occupying the same space as humans. Crops are raided regularly and probably constitute a significant part of the diet of most adult males and some herds. Herds with more than 100 elephants can be observed at some reservoirs such as Kala Wewa in the dry season. However elephants are difficult to observe in this region as they are used to high conflict and come into open areas mostly after dark.

North: Little information is available on elephants in the northern areas. A larger part of the north is still covered in mature forests hence elephant densities are likely to be low with perhaps a few hundred elephants in total. However, as in the East, the area was largely abandoned during the war and elephant numbers may have increased in response to habitat changes. Resettlement is starting now and is likely to cause increased conflict in the future.

Central and Southwest: A small remnant population of about 15-20 elephants survive in the sub-montane Adams' Peak wilderness area of the wet zone in the central highlands. About three elephants are also reported to remain in the Sinharaja rain forest complex in the Southwest. These are the only wild elephants in the wet zone. They are almost surrounded by tea cultivations and settlements. Although not very far from elephant populations in the dry zone, they are probably cut off from them.

Threats in the country

The major threat to elephants in Sri Lanka is habitat loss and fragmentation through conversion to settlements and permanent cultivation. The influx of people into areas inhabited by elephants results in increased interaction and conflict, leading to the death of over 200 elephants annually with a trend of increasing numbers (Fig. 4). Most of these elephant deaths are caused by gun shot injuries from farmers defending their crops and trap guns (Table 1). A new addition is 'hakka-patas' - a small pressure mine concealed in fruits or vegetables, which shatters the jaw on being bitten down upon. During and in the aftermath of the war, death and injuries of elephants due to landmines were reported in the north and east.

The north-western and north-central areas have the highest levels of HEC in Sri Lanka. With continued conflict, elephants appear to become more accustomed to it, tolerate higher levels of conflict and to raid crops even more frequently and aggressively. Consequently HEC becomes locked in an increasing spiral of escalation. HEC is least in the North where elephant and human

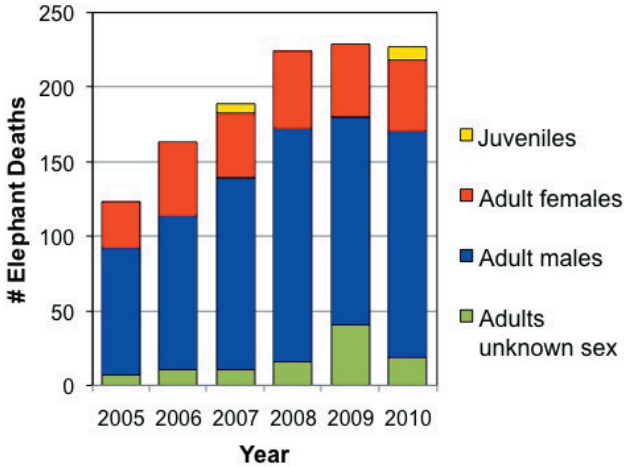

Figure 4. Demographic details of annual elephant deaths recorded 2005-2010 (DWC data).

Table 1. Causes of elephant deaths recorded annually 2005-2010 (DWC data).

Year	2005	2006	2007	2008	2009	2010	Total
Shot	73	93	85	123	113	87	574
Unknown	14	16	40	30	49	30	179
Electrocuted	9	21	19	20	19	17	105
Train accidents	14	7	23	18	14	14	90
Natural (old age)	3	4	16	22	8	2	55
Poisoned	0	3	6	10	4	8	31
Hakka-patas	0	0	0	0	0	11	11
Other	10	19	0	1	21	58	109
Total	123	163	189	224	228	227	1154

densities are low. HEC appears to be increasing across Sri Lanka and is likely to become severe in the East in the near future.

Habitat loss due to developmental activities continues to occur at an ever increasing pace especially with the drive for post war 'development'. Large scale irrigation schemes based on damming the remaining rivers and attendant irrigated agriculture of extensive areas continue to be designed and implemented. 'Development' of large extents of natural habitat currently occupied by elephants for commercial agriculture, by private enterprises, multinational companies and the government, for banana, pineapple, corn, sugar cane, rubber etc. are mooted as part of the development drive. Medium scale development based on the building of small rain fed reservoirs funded by government and non-government agencies also continues apace as do fine scale but widespread development from encroachment of state land for farmsteads by individuals. All these developmental activities result in fragmentation and loss of elephant habitat, and increase in human-elephant interaction and conflict.

The main cause of HEC is crop raiding by elephants. Elephants raid practically all food crops grown (Fernando *et al*. 2005; Ekanayake *et al*. 2011). The greatest depredation is of paddy, which is also the most widely cultivated food crop. Others such as corn, sugar cane, finger millet; vegetables such as pumpkin, sweet potato, beans, pulses; and fruits such as banana, water melon and mangoes are among crops that are frequently raided. In recent years, there has been an increasing trend of elephants knocking down coconut palms and teak trees, which cause comparatively high economic losses, hence greater negative perception of elephants. Similarly damage to house and property from elephants trying to access stored grain is of major concern to people who have to contend with elephants.

In the last six years on average 71 people died annually as a consequence of HEC (Fig. 5). Many human deaths due to elephants are preventable. The causes include drunkenness, walking or riding bicycles and motorbikes in areas with elephants in the night and confrontation of raiding elephants. Some deaths occur during house damage by elephants.

Elephant management and HEC mitigation

For over six decades the approach to elephant conservation and HEC mitigation in Sri Lanka has been the restriction of elephants to protected areas under the DWC. A system of protected areas connected by corridors was proposed in

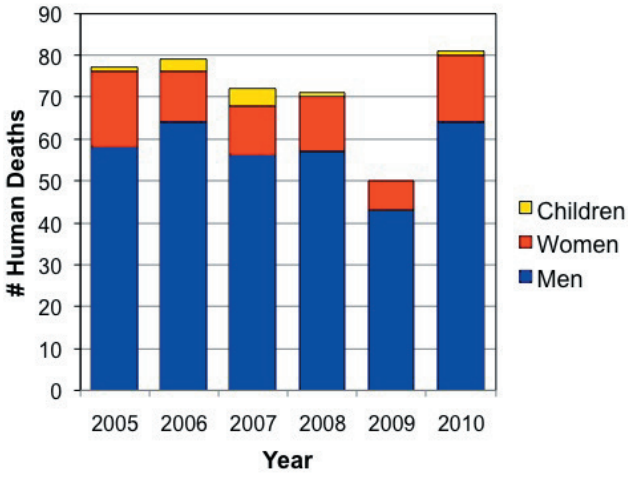

Figure 5. Demographic details of human deaths caused by elephants 2005-2010 (DWC data).

Table 2. Annual cost and number of 'elephant thunders' used by the DWC for distribution, chasing elephants and elephant drives 2007-2011 (DWC data).

Year	# thunders	Cost Rs.	Cost US$
2007	275,000	20,000,000	182,000
2008	275,000	20,000,000	182,000
2009	355,000	25,000,000	227,000
2010	514,000	42,000,000	382,000
2011	514,000	42,000,000	382,000
Total	1,933,000	149,000,000	1,355,000

1959 (Somasuntharam *et al*. 1959), which served as a blue print for management. It was based on the belief that the best habitat for elephants was undisturbed forest - hence the protected areas, and that elephants migrated long distances - hence corridors linking protected areas allowing movement between them. Most of the corridors were never established. The current protected area system under the DWC covers about 13% of the land consisting of a number of isolated parks, the largest of which are Wilpattu (ca. 1500 km^2) and Yala (ca. 1000 km^2).

The Centre for Conservation and Research (CCR) in collaboration with the DWC has so far radio-tracked approximately 50 elephants. The data obtained has shown that elephants in Sri Lanka do not migrate long distances, have well defined home ranges of 50-250 km^2 with high fidelity, and that their preferred habitat is disturbed forest (Fernando 2006a; Fernando *et al*. 2008a). Surveys have shown that over 70% of elephant range and a larger percentage of elephants occur outside DWC protected areas (DWC survey in 2004; Fernando 2006b).

The only agency responsible for managing elephants is the DWC, which also is tasked with almost the sole responsibility for mitigating HEC. The main methods used for the prevention of raiding and to mitigate HEC are - crop guarding, chasing elephants from the vicinity of crop fields and villages, elephant drives, capture-translocation and electric fencing (Fernando 2006a; Fernando *et al*. 2008b).

Crop guarding: Farmers build and occupy watch huts on the ground or trees during cultivation periods. Shifting cultivation fields in addition are ringed by a thorn and brushwood fence.

Chasing elephants: The government through the DWC distributes elephant thunders (large firecrackers 30 cm x 2.5 cm diameter) to villagers free of charge (Table 2). Where the villagers are unable to chase away elephants, DWC officials are deployed. However, with repeated exposure, elephants get habituated to thunders, become refractory to being chased and react aggressively towards attempted chasing, leading to even more raiding, aggression and escalation of conflict.

Elephant drives: Elephant drives aim to clear a large area of all elephants. It may involve dozens to hundreds of people and take from days up to a year or more to complete. Small to mid sized drives are done frequently (Table 3), while the last major drive was conducted in 2005-2006 in the south under the JBIC funded Walawe Left Bank Development Project, taking 1.5 years to complete and costing US$ 1.6 million. Although many drives have been conducted, none has been able to eliminate elephants from a given area (Jayewardene 1994). Drives may cause increase in HEC by making elephants more aggressive. Drives are also detrimental to conservation as herds driven into parks and fenced-in suffer high mortality and morbidity (Fernando 2006a).

Capture-translocation: In the last 5 years 68 elephants have been translocated in Sri Lanka (Table 4). All elephants subject to capture-

Table 3. Details of elephant drives conducted by the DWC by year (DWC data).

Year	# drives	# elephants chased	Cost Rs.	Cost US$
2007	4	86-91	445,000	4,100
2008	4	242-252	5,000,000	45,500
2009	12	341-354	3,500,000	31,800
2010	11	438-453	5,300,000	48,200
Total	31	1107-1150	14,245,000	129,600

Table 4. Elephant translocations by year 2007-2011 (DWC data).

Year	# translocations	# deaths
2007	13	0
2008	10	1
2009	18	1
2010	25	1
2011	2	1
Total	68	4

translocation are adult males. The identified individuals are darted with an anaesthetic, captured, transported by truck to a protected area and released (Fig. 6). Monitoring by GPS collars has shown that capture-translocation also does not mitigate HEC as most translocated elephants continue to cause HEC. Sometimes it even results in more intense conflict and its wider propagation. The current recurrent cost to translocate one elephant is around Rs. 270,000 (US$ 2500). Capture-translocation operations have an elephant mortality of approximately 6% due to accidents (Table 4).

Electric fencing: The DWC has currently deployed over 1200 km of electric fencing. The approximate cost per km is Rs. 500,000 (US $ 4500). A total of 600 km of new electric fencing has been erected under the DWC in 2009-2011. Electric fences are effective only if they are located properly (elephants only on one side of the fence), constructed to appropriate specifications and well maintained. Most electric fences do not fulfil one or more of the above criteria and consequently have short life spans of a few months to about a year. Elephants that challenge and learn to break ineffective fences also tend to break well maintained fences leading to electric fencing becoming unsuccessful. The DWC and a number of non-governmental organizations such as SLWCS, CCR, JICA, CARE, Practical-Action etc. have been promoting community based and managed fences on village boundaries as an alternative more successful approach. In addition, CCR has developed and deployed low-cost temporary fencing for paddy fields.

Capture and domestication: Capturing problem elephants and bringing them into captivity has been tried a few times in the past as a HEC mitigation method. However, it resulted in high mortality of the captured elephants leading to protests from environmental groups. In addition it cannot be done in a scale relevant to HEC mitigation, for logistic and financial reasons. Capture-domestication is currently not used as an option for HEC management.

Culling: Although over 200 elephants get killed due to HEC annually, these deaths are technically illegal and culling as government policy is not a socio-culturally and politically acceptable option in Sri Lanka.

Compensation and Insurance: Currently a compensation scheme for death, injury and property damage due to elephants is conducted by the DWC, with Rs. 100,000 (US$ 900) being paid in case of death (Table 5). Compensation and insurance for crop losses have been tried but have not been very successful so far.

Awareness programs: A few conservation NGOs conduct awareness programs. The Biodiversity and Elephant Conservation Trust has a schools program covering many elephant areas (Jayewardene 2011) and Born Free Sri Lanka conducts awareness in selected villages. The DWC also has a few schools and village awareness programs.

Table 5. Annual compensation [in Rs.] paid by DWC (DWC data).

Year	Deaths	Injuries	Property damage	Total [Rs.]	Total [US$]
2005	4,600,000	490,000	1,730,000	6,820,000	62,000
2006	6,090,000	740,000	2,850,000	9,680,000	88,000
2007	5,000,000	980,000	5,940,000	11,920,000	108,400
2008	5,680,000	1,160,000	7,000,000	13,840,000	125,800
2009	6,580,000	1,030,000	9,030,000	16,640,000	151,300
2010	11,990,000	1,050,000	25,690,000	38,730,000	352,100
Total	39,940,000	5,450,000	52,240,000	97,630,000	887,600

Future management

Surveys of elephant distribution and HEC, and monitoring of elephants with GPS-collars has clearly demonstrated that the approach of limiting elephants to protected areas has failed and that it is neither effective in conserving elephants or mitigating the HEC. This finding was the basis of a new strategy advocated by the National Policy in 2006. The policy proposes an alternative approach of human-elephant coexistence and management of elephants both in and outside protected areas, with regulation of shifting cultivation, prevention of crop raiding by community based electric fencing, and landuse planning. However, affecting a change in paradigm as espoused by the National Policy takes time Creating awareness across all stakeholders in elephant conservation and HEC is critical for its realization.

Captive elephants

Captive elephants have been a central feature of Sri Lankan civilization since antiquity. Ancient kings maintained stables of elephants that numbered in the thousands, including hundreds of war elephants (Wisumperuma 2004; Kurt & Garai 2007). The techniques on how to control captive elephants were a part of the education of princes in Sri Lanka (Kurt & Garai 2007). Initially all elephants belonged to the King. In the colonial period the Portuguese and Dutch rulers had a monopoly over the ownership of all domesticated elephants. Later the Dutch allowed the local Chieftains, who captured wild elephants for their colonial masters as tribute, to keep one or two. This is how the tradition of elephant keeping by private owners started in Sri Lanka.

Elephants were captured by nooses set in the ground by 'Pannikans' a group that specialized

Figure 6. Male 'Nalagiri' being loaded on a truck to be transported to a National Park.

in such captures, 'kraal' or 'kedah' operations during the colonial period and after (Jayewardene 1994; Katugaha 2008), and more recently by drug immobilization. The last kraal was held in 1950 (Katugaha 2008). Elephant captures by private individuals was terminated at the same time. However, private captures were again allowed in 1972-1974 and a few elephants captured by DWC were given out till the 1980s (pers. comm. Edmund Wilson). Currently elephants are kept by temples, private owners, the National Zoological Gardens at Dehiwala, the Pinnawela Elephant Orphanage and the Elephant Transit Home at Udawalawe. Some temples and private owners have been given young elephants from Pinnawela. Illegal wild captures are thought to supplement the captive population (Jayantha 2011).

Captive elephants in Sri Lanka do not have any opportunities to interact with wild elephants. There have been very few births in captive elephants outside of the Pinnawela Elephant Orphanage (Jayantha 2011). Currently there are around 112 captive elephants in Sri Lanka with temples and private owners. Captive elephant numbers have decreased steadily over the years

Table 6. Surveys of captive elephants (excluding Pinnawela and ETH).

Year	Surveyor(s)	Males	Females	Unknown	Total	Owners
1955	P.E.P. Deraniyagala	NA	NA	NA	670	NA
1970	Jayasinghe & Jainudeen	NA	NA	NA	532	378
1982	DWC	183	161	0	344	NA
1994	Dr. Cheong	148	166	2	316	154
1997	J. Jayewardene & S. Rambukpotha	107	107	0	214	136
2002	J. Jayewardene	101	88	0	189	131

(Table 6), due to the death of older elephants which is not offset by the small numbers added to the captive population by releases from Pinnawela and illegal captures.

Pinnawela Elephant Orphanage

HEC results in baby elephants becoming orphaned due to the mother's death or abandonment. The Pinnawela Elephant Orphanage was set up in 1975 to take care of such orphans. Started with five orphaned baby elephants, the addition of orphans continued till 1995 when the Elephant Transit Home (ETH) was created by the DWC. Since then, orphaned babies have been taken to the ETH and addition to the Pinnawela herd has been mostly through births occurring there. So far Pinnawela has recorded 69 births – 38 males and 31 females. Currently there are 88 elephants (37 males and 51 females) in Pinnawela representing 3 generations. There are 48 mahouts (handlers) to look after them.

The female and young elephants in Pinnawela are free to range as a herd during the day in an area of a few acres. They are herded to water twice a day in the river. The females are individually chained in stalls in the night. Adult males are chained and managed individually, similar to privately owned elephants (Fig. 7). They also do some work such as transporting feed. Calves born in Pinnawela are not bottle fed but a few from ETH are kept at Pinnawela and bottle fed as a tourist attraction. Pinnawela draws a large number of local and foreign tourists.

Elephant Transit Home

The ETH was set up to take care of orphaned elephants until they are fit enough to be released back to the wild. Orphaned elephants brought to the ETH are treated and taken care of for about three years. The mortality rate of arrivals is around 40% (de Silva & de Silva 2007). They remain as a group during the day and are kept in a stall for the night. They are bottle fed every 4 hours throughout the 24 hours. An entrance fee is charged from visitors to the ETH and they can observe elephants being bottle fed. An information centre set up in collaboration with the Dilmah Trust, provides information on elephants to visitors.

From 1998 to 2011 a total of 76 elephants have been released in 11 batches with 4-11 elephants in each batch. Till 2010 all releases were to the adjoining Udawalawe NP. Since then some elephants have been released to the Maduru Oya NP and Lunugamvehera NP due to concerns of overcrowding in Udawalawe. Observations conducted on the batch of 11 elephants (7 females, 4 males) released in 2004 in three locations in Udawalawe, found one male and one female integrating into wild groups, seven forming a 'juvenile group' of their own, one female injured and brought back to the ETH and one female returning to the ETH by herself (Jayantha 2006).

The Temple of the Tooth

The single largest group of elephants outside Pinnawela is at the Temple of the Tooth in Kandy. The 11 elephants kept are all males and consist of 2 tuskers from India, 2 tuskers from Myanmar, 1 tusker from Thailand, and 3 tuskers and 3 non-tuskers from Sri Lanka. The elephants only take part in pereheras.

The Millenium Elephant Foundation

The Millennium Elephant Foundation is a private enterprise in Pinnawela, which serves more or less as a retirement home for working elephants. Tourists are provided short rides and there is a program that caters to 'volunteers' - mostly

Figure 7. Blind male 'Raja' captured and tamed at Pinnawela Elephant Orphenage.

foreigners who like to work with the 7 elephants kept there.

Zoological Gardens

The National Zoo in Dehiwala in the suburbs of the capital city Colombo currently holds 8 Sri Lankan elephants consisting of 2 males (1 juvenile, 1 adult) and 6 adult females. The zoo also has one African elephant male.

Management of captive elephants

Other elephants held by temples and private owners are mostly single animals. They are mainly used in pereheras. A few elephants still work in handling logs etc. and some are engaged in giving rides to tourists especially in Habrana (Fig. 8). Elephant owners lobby for legalizing wild captures and releasing elephants from Pinnawala or the ETH on the argument that the captive population is declining and that it is essential to maintain the cultural and religious traditions associated with elephants.

All captive elephants are supposed to be registered at the DWC, but it is more observed in the breach. Mahouts remain mostly traditional. Management of captive elephants is based on their subjugation, chains and free use of the ankus. While there have been discussions of starting a mahout training schools, none have materialized.

Veterinary care for captive elephants is provided by the University of Peradeniya Veterinary Faculty, DWC and private veterinarians. Some owners and mahouts prefer traditional medicine to western. The DWC is conducting TB testing of captive elephants and elephants tested are also microchipped. Currently approximately 20 captive elephants have been thus microchipped.

There has also been much discussion of a National Policy and guidelines for captive elephant management but again none are in force.

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Figure 8. Elephant 'Monika' taking tourists for a ride (Kandalama).

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