

# GAJAH

Number 21

January 2002

ISSN: 1391-1996

JOURNAL OF THE ASIAN ELEPHANT SPECIALIST GROUP



**IUCN**  
The World Conservation Union



# GAJAH

issn: 1391 - 1996

JOURNAL OF  
**THE ASIAN ELEPHANT SPECIALIST GROUP**

**GAJAH** is the Journal of the Asian Elephant Specialist Group (AESG) of the IUCN-Species Survival Commission (SSC).

**GAJAH** aims to promote the conservation and management of the Asian Elephant both in the wild and in captivity. It also provides a forum for communication among the members of the **AESG**.

**GAJAH** welcomes original manuscripts dealing with conservation and management of the Asian elephant. All original manuscripts will be reviewed by referees. Contributions should be typed, double spaced on one side of A4 paper, or submitted on disks.

The publication of **GAJAH** is financed by the US Fish and Wildlife Service.

Editor

**Charles Santiapillai**

Department of Zoology, University of Peradeniya

Peradeniya, Sri Lanka

e-mail: <csanti@slt.lk>

Cover photo (courtesy: Dr. H.I.E. Katugaha)

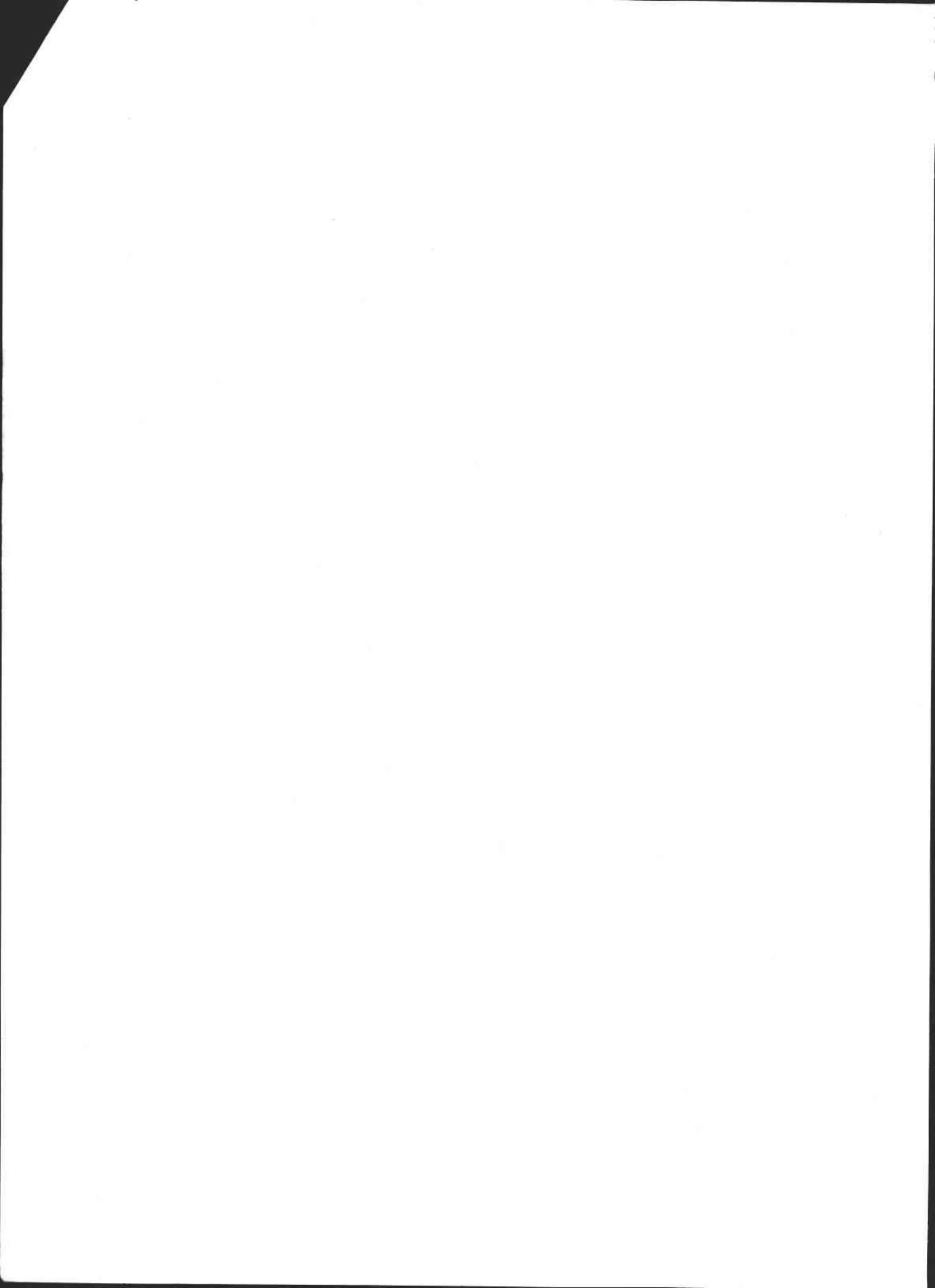
# GAJAH

**JOURNAL OF  
THE ASIAN ELEPHANT SPECIALIST GROUP**

Editor

**Charles Santiapillai**

**Number 21, January 2002**



# **The Elephant Training Centre at Way Kambas National Park, Sumatra: a review of its operations and recommendations for the future**

## **Pusat Latihan Gajah di Taman Nasional Way Kamabs, Sumatera. Evaluasi operasi pusat dan rekomendasi masa depan.**

### **Joanne Reilly**

Department of Biological Sciences,  
Manchester Metropolitan University,  
Chester Street, Manchester, M1 5GD, England

### **Pak Sukatmoko**

Forest Protection & Nature Conservation (PHPA),  
Way Kambas National Park, Sumatra, Indonesia

### **Introduction**

More than two million Asian elephants have been captured throughout history, with approximately 16,000 elephants in captivity today or 0.8% of all elephants ever captured (Sukumar, 1992). In the past elephants were used as draft animals to transport people and goods, to haul timber in logging operations and in cultural and religious ceremonies. Today the elephants are little used as draft animals and most elephant camps in Asia accommodate elephants that work in logging operations. A significant number of captive elephants are not kept in state controlled camps but are owned by private individuals and mahouts. Mahouts hire their services to logging operations and for tourist activities and they participate in religious and cultural ceremonies. Other privately owned elephants are used in circus troupes, zoos or simply kept by wealthy individuals as a remembrance of the status they previously conferred on kings and sultans.

Elephants were kept in Sumatra largely in the royal stables as status symbols and for use in ceremonies. Most elephants were caught young with the use of trained 'khoonkie' elephants after first killing the mother (van Heurn, 1929). In 1621, the King of Aceh had 900 elephants who were trained to kneel in supplication and raise their trunks three times as he passed. They were not frightened of fire or shooting and were used to haul timber, heavy anchors and pull the King's galleons (van Heurn, 1929).

At the funeral of Sultan Iskander Thani in 1641, 200 elephants were present bedecked in silks and gold, with elaborate riding canopies and decorated tusks (Poniran, 1974; van Heurn, 1929). Indeed, so valued were these elephants that upon death their mahout was stuffed alive inside their charge's stomach and together thrown into the sea (van Heurn, 1929), contrary to somewhat more humane reports that the mahout was killed beforehand (Santiapillai & Jackson, 1990). Around that time elephant fights were staged with around 150 elephants forming an arena around two notoriously aggressive bulls who were each tied to two adult females by their hind legs, to aid their removal after the fight (van Heurn, 1929). van Heurn relates this story from Mundy (1919, in van Heurn, 1929) who believed that such fights were similar to how wild elephants fought and more amazingly that elephant testicles were to be found behind their ears! Around 1598 captive elephants were also used to rip apart people unwilling to convert from Christianity to Islam (van Heurn, 1929). As the reign of the Aceh Kings weakened so too did their use of elephants. Marsden (1811, in van Heurn, 1929) states that few elephants were kept in captivity outside of Aceh. Therefore it is unlikely that many captive elephants were to be found elsewhere in Sumatra when by the early nineteenth century hardly any elephants were left in the Aceh stables (van Heurn, 1929).

Captive elephants were used as draft animals by the Sultans to haul timber and anchors but also by the Dutch

colonisers to haul artillery in times of war and telegraph poles in times of peace (Santiapillai & Ramono, 1993). Studies by Temminck (1847, in van Heurn, 1929) proclaimed that the Sumatran elephant in addition to being more intelligent and useful; was as easy to tame as the Indian elephant these sentiments were supported by Lekkerkerker (1916, in van Heurn, 1929). Around 1906 after the army had successfully trained elephants to haul timber, wild elephants were caught using pitfall traps of 3 metres width and breadth and with very steep walls. Only elephants greater than 1.6 metres high were kept, as they were neither too young nor too old to train and use. These elephants were used by the army to pull long carts and in road building as they were deemed more economical than local manpower. By the late 1920's very few elephants were used by the army in Indonesia with some army elephants having been given as gifts to the Sultans of Yogyakarta (van Heurn, 1929). Blouch & Haryanto (1985) report that elephants were kept mainly for ceremonial purposes right up until the first part of this century. They stated that captive elephants held by Aceh royalty were not trained for or used in work, differing from Lair's view (1997) that if captive elephants were used by Dutch colonisers, then it was probable that they were also used by local people and Sultans. By this century the tradition of elephant-keeping in Indonesia was lost as evidenced in 1982 when a nationwide search turned up not one native mahout (or 'pawang' as they are called in Bahasa Indonesia) (Sterba, 1989).

#### *The Indonesian Government's capture program*

The Indonesian government's response to the ever-growing human-elephant conflict throughout Sumatra has relied primarily on capturing 'problem' elephants to be trained in useful work at elephant training centres. Today there are six such centres in Sumatra, the first to be established, in 1985, was the centre at Way Kambas National Park (Fig. 1).

In addition, the establishment of 3 new centres was recommended at the 1993 "Asian elephant in Sumatra, Population & Habitat Viability Analysis (PHVA)" workshop

(Tilson *et al.*, 1993). The workshop assessed the status of the wild and captive elephant populations in Sumatra and concluded that all non-viable wild populations and populations inhabiting production forests should be captured between 1994 and 1998 for training. Soemarna *et al.* (1993) detail where captures are to be made (Table 1). This program will result in approximately 715 wild elephants being introduced to the existing captive population, with 30% of all captures to be brought to the centre at Way Kambas. This will necessitate the transfer of captive elephants from present centres to establish new captive populations and the distribution of trained elephants to both government and privately owned populations throughout Indonesia to prevent exceeding the capacity of existing centres. The workshop report was regarded as the most recent representation of the Indonesian government's policy regarding the Sumatran elephant in captivity available.

**Table 1.** Population estimates of wild elephant populations in Lampung, and proposed captures between 1994 and 1998.

<i>Location</i>	<i>Modified estimate</i>	<i>Proposed no. of captures</i>
S. Buaya – Blok 45	110	110
Way Terusan – Blok 47	40	40
Rebang – Blok 42	30	25
S. Muara Dua – Blok 44	20	20
Way Hanakau – Blok 46	20	20
<b>Total</b>	<b>220</b>	<b>215</b>

*Source: Soemarna et al., (1993)*

Many reasons dictated that a centre for elephants be established in 1985. The pressures on land from local people and growing numbers of transmigrants increased the existing conflict between wild elephants and the human population. Areas throughout Sumatra particularly in Lampung and Riau, were subject to constant elephant depredation with wild elephants regularly raiding the crops of local cultivators and plantations. Fatalities were common

and public opinion demanded action. The Forest Protection & Nature Conservation Department of the Ministry of Forestry (PHPA) decided to establish elephant training centres near conflict areas, where wild-born problem elephants could be brought to be trained for use in logging, agricultural and tourism activities. The tradition of elephant-keeping which eventually returned to Sumatra in 1985 with the establishment of the centre in Way Kambas National Park was introduced from Thailand with the arrival of two Thai 'khoonkie' elephants and four mahouts from the Northern province of Chaiyaphum. The aims of the centre as stated by Santiapillai & Ramono (1991) were to "promote the breeding of elephants in captivity so that some animals will be available for use in Forestry and nature-oriented tourism" which was later expanded to "re-establish the elephant as part of Sumatra's myths, history and cultural heritage (Santiapillai & Ramono, 1991). The PHPA were helped in their efforts by Taman Safari Indonesia (TSI) who were involved in the successful selection and translocation of the two khoonkie elephants and mahouts from Thailand to Way Kambas National Park (Manansang, 1993).

#### *The Elephant Training Centre in Way Kambas National Park.*

The 1000 ha facility was established in Way Kambas National Park after the capture of a young female elephant 'Kartija', in 1984, which had fallen into a disused well. An additional three elephants were captured by PHPA in response to the killing of a young boy by a crop-raiding elephant in Sukadana near Way Kambas. This response by the PHPA avoided the need to kill any elephants and was seen to actively address the problem (Santiapillai & Suprahman, 1984). This exemplifies Santiapillai & Ramono's (1993) reasoning that "capturing 'problem' elephants and training them for useful service to man seems more humane than shooting them as pests".

Way Kambas was an ideal choice for the first elephant training centre (ETC, Pusat Latihan Gajah) as it was in an area plagued by constant human-elephant conflict and  
*Gajah 21 (2002)*

near to Jakarta which was important when considering the potential for tourism. The centre is funded through the government's annual budget, after submission of a proposal each year (Suprahman, 1993), and received approximately 1 billion rupiahs (\$83,333) in 1997 (Pak Nyoman, pers. comm.). The cost of keeping an elephant and mahout in 1993 was estimated to be 6,583,000 rupiahs per year (Suprahman, *et. al.*, 1993), but it is not clear if this figure includes the overheads of maintaining other staff, health care and infrastructure upkeep. These costings when applied to 1997 for a minimum of 120 elephants estimates a total cost of \$65,830 not accounting for significant increases as a result of the economic crisis. In 1993 there were more than 68,000 visitors to the centre generating approximately \$50,000 from entrance fees alone and not including additional revenue from the entrance fee to the 'atraksi' show, safari rides and goods purchased. It is not clear how much of this money is directed to the centre itself.

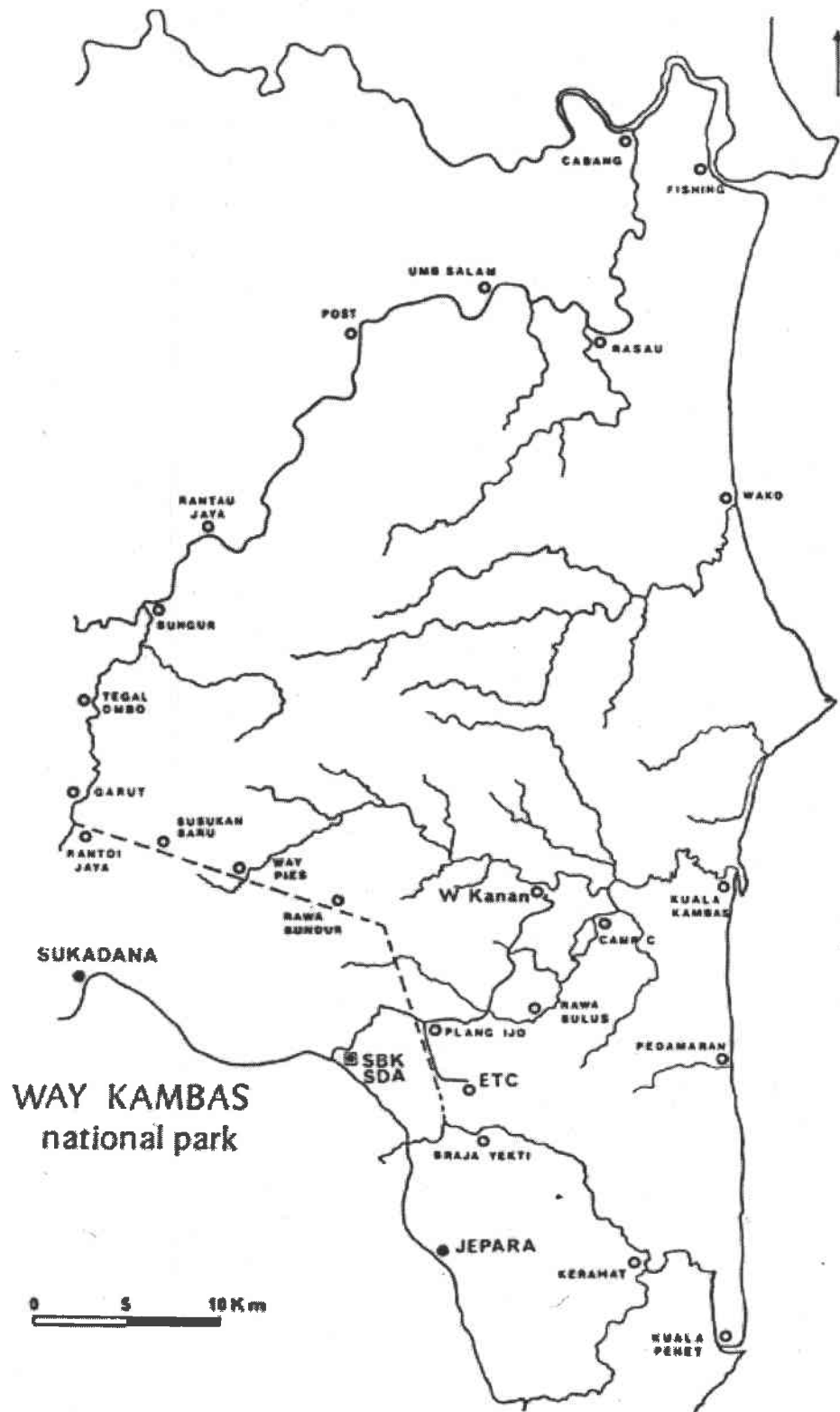


Figure 1. Way Kambas National Park, Lampung Province, Sumatra.



## Data collection

The information presented here was gathered from interviews with staff members, records held in the centre, reports to various PHPA departments and direct observation. There are gaps in the recorded information either due to records being lost, data not being recorded or being unavailable. There is therefore difficulty in determining accurate numbers for the structure of the captive elephant population and births, deaths and transfers since 1984. Every effort has been made to compile information from more than one source and all numbers presented here should be regarded as minimum estimates. Lair (1997) comments on the 'impossibility of giving firm numbers for Indonesia' and states that officials asked basic questions relating to population structure at time of capture, transfer etc. could not answer with precision.

## The capture of wild elephants

The centre receives orphaned elephants, crop-raiding elephants, elephants from doomed 'pocketed herds' and a small minority of wild male elephants. The latter are regarded as a disturbance to the local people and are captured as they come to mate with the captive females (Nazarrudin pers. comm.). At present most elephants captured and brought to the centre are elephants that have reportedly come into conflict with the human population usually by raiding the crops of local cultivators and plantation owners.

### Capture Procedure

When reports of elephant crop-raiding are made to the PHPA they send staff to the site in question who then follow the signs of elephant activity such as the presence of dung and foot prints, to locate the offending elephants. PHPA staff are satisfied that local cultivators and watchmen can recognise individual crop-raiding elephants and are allowed to aid the PHPA staff in the initial stages of the capturing process (Nazarrudin, pers. comm.), even though

Hoare *et. al.*, (1995) believe that problem elephants are actually very hard to identify individually. The more serious the damage reported the more likely it is that action will be taken (Suprahman *et. al.*, 1993).

The five methods commonly used to capture wild elephants in Asia are the keddah (kyone) method, melashikar (kyaw-hypan) method; decoy method, the drug administered immobilisation method and the use of pitfall traps (Santiapillai & Suprahman, 1985). The first method relies on driving elephants into a ditch or stockade, the second method involves lassoing elephants, the decoy method uses a female as a lure to attract bulls and the pitfall trap relies on elephants falling into pits. This last method is dangerous, unselective and stressful for the animal concerned and is least, if at all, used today.

The drug administered immobilisation method is the only method used to capture elephants in the wild before bringing them to the centre in Way Kambas for training. This method can use either etorphine hydrochloride (M99) in conjunction with cyprenorphine to immobilise and revive the animal respectively or xylazine ('Rompun') fired from a Telinject gun as a sedative. A skilled group of PHPA park guards have developed the necessary techniques and experience to carry out this procedure largely through self-learning. Rompun is generally regarded as a 'rough' drug (Lair, 1997; John Lewis, pers.comm.) and was not always effective in Way Kambas. M99 was used from 1985 to 1986 and is seen as a more robust drug but requires an antidote and is costly and hard to obtain. The dosage of Rompun administered varies with the estimated age of the elephant (Table 2). Elephants estimated to be younger than four years of age are not drugged (Nazarrudin, pers. comm.). The centre manager was confident that no newly captured elephants suffered any problems (Pak Rusman, pers.comm.), yet perhaps unknown to him there are reports which indicate that two elephants overdosed on Rompun died on the same day. With the capture of wild elephants in Riau province a second darting is sometimes needed and elephants remain

sedated for approximately four hours (Ron Lilley, pers.comm.). Darting is usually carried out from the back of a trained elephant called a 'khoonkie' and new elephants are sometimes tied to the khoonkie elephant from around their neck with rope.

**Table 2.** The dosage of 'Rompun' administered to tranquillise wild elephants

Age (years)	Dosage (cc)
4-7	5-10
7-13	7-15
13>20	10-15

Source: Pak Rusman & Pak Nazarrudin, PHPA Way Kambas, pers. Comm.

A vet does not always accompany the capture team on their trips, although it was recommended for the capture of elephants to be brought to the centre at Sebang in Riau province (Santiapillai & Ramono, 1989). If captured nearby, the new elephants are walked to the centre, with the aid of khoonkies. Alternatively if caught away from the centre, they are fed and watered before travelling by truck, sedated if necessary. Krishnamurthy (1992) accompanied newly caught elephants on their 165 kilometre trip to the centre which he states was carried out with little stress to the elephants.

#### Capture details (1984-1996)

Between 1984 and 1996, 285 wild elephants were captured in Lampung province, with 11 and six elephants captured in 1991 and 1992 respectively (Table 3), contrary to the number given in the annual report of PHPA BKSDAII, Tanjung Karang, which stated that 36 elephants were captured in 1991/92, ten from central Lampung and 26 from northern Lampung. The number of captures between 1994 and 1997 increased annually contrary to the proposed decrease in the number of captured elephants to be brought to the centre in Way Kambas (Suprahman *et. al.*, 1993).

Gajah 21 (2002)

**Table 3.** Capture of wild elephants in Lampung Province, 1984 – 1996.

Year	North	South	Central	West	Total
1984	0	0	1	0	1
1985	8	0	3	0	11
1986	4	2	8	0	14
1987	14	1	11	0	26
1988	15	5	6	0	26
1989	10	0	2	0	12
1990	3	0	6	0	9
1991	2	8	1	0	11
1992	4	0	2	0	6
1993	16	1	5	0	22
1994	25	1	7	0	33
1995	23	0	9	2	34
1996	42	3	27	8	80
<b>Total</b>	<b>166</b>	<b>21</b>	<b>88</b>	<b>10</b>	<b>285</b>

Source: PHPA SBKSDA Way Kambas & BKSDA II, Tanjung Karang

- Of the 119 elephants at the centre in 1997, most originated in and around the park's boundary. For example, 16 elephants were captured in Karangsari, 29 in Mesuji and 14 from inside Way Kambas (Table 4). There is no reason given for the capture of wild elephants from Way Kambas, a protected conservation area.
- Capture details for the 1997 captive population reveal that 40% were captured in December and January and 14% in July. Details for 1996 show that eight trips resulted in the capture of 80 elephants in groups ranging from 3 to 21. All of these elephants were captured during the wet season months from November to March when most crops are harvested, in contrast with Suprahman *et. al.* (1993), who stated that most elephant captures occurred from March to July.
- Sudiarno (1997) reported that one trip an average of ten elephants were captured and on another occasion 12 elephants were captured in seven hours in a sugar cane plantation (Nazarrudin, pers. comm.). In general six PHPA staff are involved in capturing

wild elephants but their number can range from four to 12 staff, depending on the circumstances (Nazarrudin pers. comm.).

- The centre manager claims that elephants are captured at a ratio of 2 males per female within the ages of 4-26 years of age (Pak Rusman, pers.comm.). However partial records for 15 captures in 1994 indicate a ratio of 0.67 male per female, with 12 out of the 15 elephants captured estimated to be ten years or under. Krishnamurthy (1992) reported a ratio of 0.74 males per female for a population of 59 elephants held at the centre in 1991.

**Table 4.** The origin of elephants maintained at the centre in 1997

Origin	Female	Male	Total
Bendungan	1	0	1
Gunung Betung	1	0	1
Karangsari	2	14	16
Lampung barat	2	14	16
Lampung utara	12	10	22
Mesuji	15	14	29
Padang Cermin	5	1	6
Palembang	0	1	1
Plangijo	1	1	2
Şidodadi	0	2	2
Susukanbaru	1	0	1
Transpram	0	1	1
Way Hanako	1	1	2
Way Kambas	6	8	14
Wonosobo	0	5	5
<b>Total</b>	<b>47</b>	<b>72</b>	<b>119</b>

Source: PHPA SBKSDA, Way Kambas

- In 1997, 75% of the captive elephant population was under 15 years of age at the time of capture (see Fig. 2). Suprahman *et. al.* (1993) stated that most elephants were between 10 and 20 years of age at the time of capture. Lair (1997) states a claim that PHPA capture 'almost only young elephants', which he supports with observations that the oldest elephant at the centre in

Way Kambas is 'clearly no older than thirty'. He reports PHPA officials as stating that old elephants are not captured as they do not crop-raid, an argument which he rightly questions with examples from Sri Lanka and India and which is supported by the findings of Reilly (in prep).

Little data are available on the structure of groups captured apart from the direct observations of mahouts and Krishnamurthy (1992). Information from one capturing trip provides details of eight elephants captured in August 1997, (Pak Dharmis, pers.comm.). Over a period of four days and three nights two juveniles and one adult female were captured in Blambangan Umpu, northern Lampung, and one juvenile and three adult females were captured over seven days and six nights from the Mesuji area of Northern Lampung. All of the captured elephants were brought to the centre by truck. Krishnamurthy (1992) reports the capture of 15 elephants, near Kotabumi consisting of six adult females, three sub-adult females, two juvenile females, one female calf and three juvenile males, with a sex ratio of 0.25 males per female.

It is reported that the Thai mahouts did not like to catch old females as they were particularly afraid of them and believed them to be too difficult to train. In relation to this between 1991 and 1997 approximately 15 females estimated to be older than 30 years of age were released back into Way Kambas National Park (Nazaruddin, pers comm.). It is felt that male elephants are easier to handle and in 1987 and 1997 there were slightly more males at the centre. Nazarrudin (pers.comm.) postulates that male elephants adapt well to the conditions at the centre, possibly because there is a constant supply of food and less aggression between males than there might be in the wild. However, Suprahman *et. al.* (1993) stated that rogue bulls are a serious problem as they are not suitable for capture or training

An increase in the capture of wild elephants throughout Sumatra was proposed at the "Asian elephant in Sumatra" PHVA workshop (Soemarna *et. al.*, 1993). However, capture details for Lampung Province from 1984 to 1996 (Table 3) show that the number of elephants captured in

1994 and 1995 fell well below that proposed but was compensated for the following year when captures exceeded the proposed quota for 1996 by 100%. Comparing information on the population estimates for the remaining wild populations (Santiapillai *et. al.*, 1993) shows that there would be no wild elephants left outside of protected areas in Lampung province if this program is implemented.

### **The Training programme**

Expertise in elephant training was reintroduced to Sumatra with the arrival of four mahouts and two khoonkie elephants from Chaiyaphum province in northern Thailand. The mahouts from Chaiyaphum province are generally regarded primarily as elephant capturers as opposed to elephant trainers and rely on pain as a key element of their training procedure (Lair, 1997). The Thai mahouts were praised for their training but two were thought to have been too severe in their methods (Nazarrudin, pers. comm.). It is generally agreed that greater skills for training an elephant after initial capture are found in other areas of Thailand (Lair, 1997).

### *Taming*

The elephants are trained according to the 'runk' method traditionally used by the Thais in their training. The locally available 'Jahiti' tree is used in the construction of the runk (Plate 1a). The original ceremony has been modified to reflect the predominantly Moslem beliefs of the staff at the centre. Offerings of wine, roast chicken, betel leaf, areca nut, limes, water, coffee and cigarettes are made in the hope of a successful training program and a good relationship between elephant and man.

Taming an elephant normally takes approximately one month and involves withholding food from the new elephant for a few days. The newly captured elephant is tied directly to one or more khoonkie elephants, while his feet are hobbled and surrounding mahouts prod him with hooks and sticks and taunt him. Eventually over time and with the aid of the khoonkies the new elephant allows himself to be controlled. This understanding between elephant and mahout will have to be established with every

mahout that will care for the elephant during its lifetime in captivity.

The mahout mixes verbal, visual and physical commands and uses the hook, ropes and hobbles in training his elephant. Many mahouts use sticks in place of hooks while riding their elephants, which was commended by Krishnamurthy (1992). Basic training can take six months after which time the elephant has learned how to greet a person, sit, reach for objects, climb steps and deal with the crowds of weekend visitors.

The Thai mahouts relied on pain in their training which is a practice that continues at the centre certainly in the initial taming of new elephants (Sudiarno, 1997). Lair (1997) however states that training at Way Kambas no longer relied on pain, which he believed was unlike the usual mainland practices. Krishnamurthy (1992) did not directly observe the initial training of newly captured elephants noting as he did that elephants captured between January and July 1991 had not undergone training by September/October 1991. He does refer to the use of the hook in training elephants in Way Kambas, a practice which he states is never used in southern India as it is believed to be a barrier preventing the necessary close bond between elephant and mahout. Nazarrudin (pers. comm.) outlined a training program of 10-15 minutes duration in the morning and afternoon. Krishnamurthy (1992) noted that training was interrupted frequently if the animal appeared to be nervous, a feature of the training in Way Kambas which he felt did not help produce obedient elephants, which is after all the desired product of a successful training program. He also suggests that the 'kraal' method of training might be better implemented as this training course helps keep the elephant immobile. This is more effective in teaching the elephant the important ability to be still and quiet on demand, a quality that he never observed from the elephants in Way Kambas. In addition he felt that that the "unsystematic methods and lack of firmness" in training produced confusion and trauma in the new elephants. In the 1980s detailed records were kept of the progress of each elephant throughout its training, with graphs of the level of proficiency attained.

### *Khoonkie elephants*

Following taming a specialist training is required before elephants can be used as capture khoonkie elephants, or in agriculture, logging and tourist operations. Khoonkie elephants are vital to the success of any centre's capture and training program. In 1997 approximately 11 locally trained elephants in the centre were available for use as khoonkie elephants. These elephants were mainly adult male elephants as it is felt that they are more courageous and better suited to the tasks involved (Nazarrudin, pers.comm., Plate 1a). This is a real achievement as it relieves the pressure to import trained khoonkies from other range states and ensures that staff in the centre develop these important training skills. This is increasingly important as the need for khoonkies will grow with the establishment of the three new proposed centres and the planned extensive capture programs. It is not yet apparent to what extent the use of smaller statured locally trained khoonkie elephants may influence the tendency to capture younger smaller elephants. Suprahman *et. al.* (1993) recommend the acquisition of more khoonkies from abroad to fill the demand for two khoonkies for each training centre. In this regard eight khoonkie elephants arrived from Thailand in 1997 but were returned less than a year later after controversy surrounding their care while in Indonesia.

### *Specialist skills training*

Elephants are trained to haul timber, assist in agriculture and entertain tourists. Nine elephants held at the centre in 1997 were trained to plough and haul timber and 11 elephants trained as capture elephants (Table 5, Nazarrudin pers.comm.).

**Table 5.** Number of trained elephants employed at the centre, 1997

Type of employment	Number of elephants
Elephant rides	27
Logging/Ploughing	9
Capture 'khoonkie' elephants	11
Attracsi elephants	72
<b>Total</b>	<b>119</b>

Source: Pak Nazaruddin, *PHPA Way Kambas pers. comm. Gajah 21* (2002)

Training elephants to skid logs and plough fields started in 1992 and was continued until 1996 when the lack of equipment and resources prevented further training. Elephants have been trained by their self-taught mahouts, who use trial and error to perfect their techniques. The elephants are trained in groups of three to four animals to skid (or pull) logs between 30 cm and 40 cm in diameter at breast height. For training purposes elephants from the centre ploughed nearby farms to prepare the land for the planting of corn and other crops. It took approximately four days to plough one hectare. Apparently one elephant can do the work of ten buffaloes (Sukanto & Chandler, 1993). One of the mahouts in question thinks that local farmers would be supportive of using elephants to plough land if the cost was kept low and if their security was assured (Kholidin, pers. comm.).

The majority of elephants at the centre are trained for tourism purposes, predominantly as participants in the 'attracsi' show, produced by the centre for paying tourists. During the show, which costs 1,000 rupiahs in addition to the entrance fee, the elephants perform a variety of acts: dancing, walking over people, standing on their hind legs, performing various tricks and playing football, for which the centre's elephants are most famous. In 1997, 72 elephants at the centre were trained as 'attracsi' elephants (Table 5).

Some staff at the centre expressed concern that elephants sent to tourist resorts and centres were harshly trained to perform difficult tricks such as riding bicycles, which they would not condone in the show at the centre. 'Dancing' elephants are a popular feature of the attracsi show but no training sessions were observed to determine how they are trained to dance. Lair (1997) outlines the technique used by the mahouts of Chaiyaphum province which involves chaining the elephants feet while playing music and striking the elephant on the back above the kidneys, causing the elephant to raise his feet. Eventually the elephant learns to associate music with raising his feet and gives the appearance of dancing.

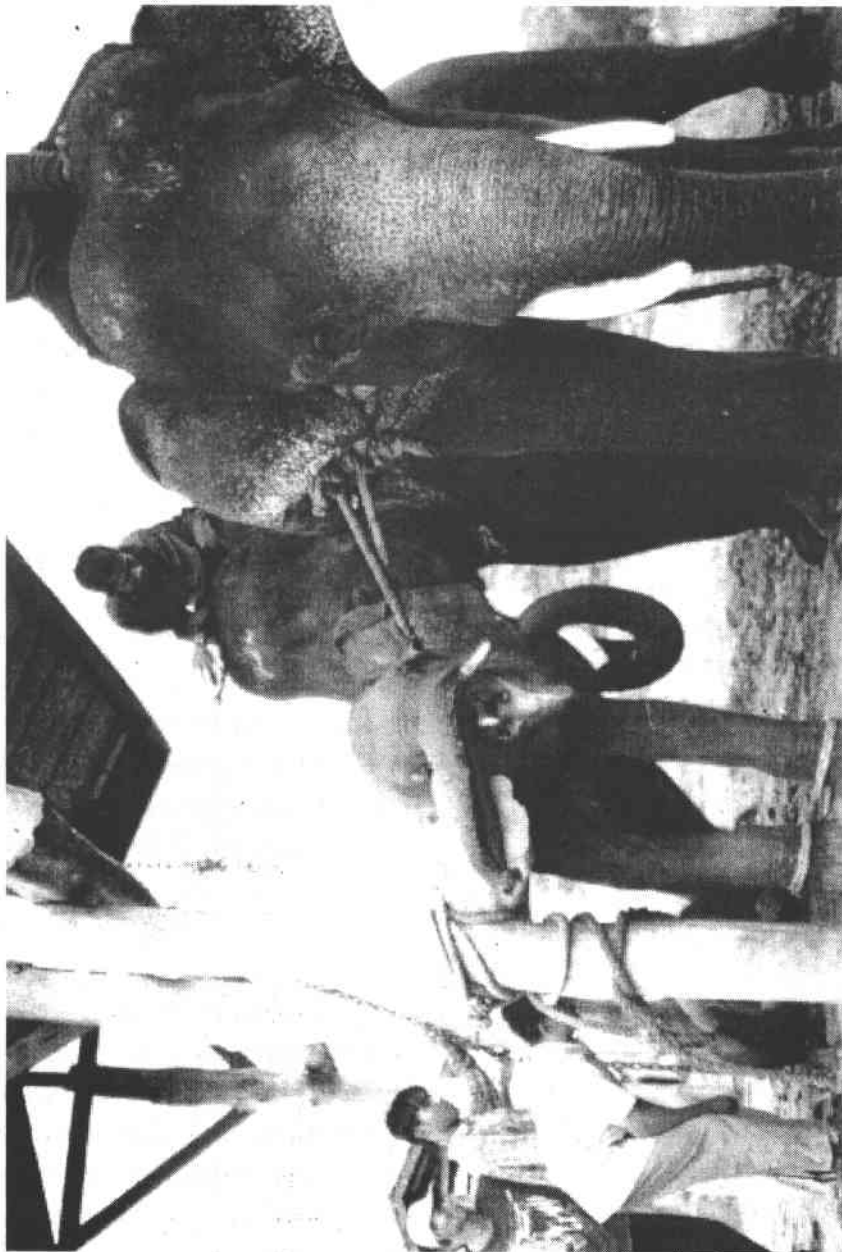


Plate 1a. A newly captured elephant being broken in at the training runk with the aid of two khoonkie elephants, Way Kambas, March 1998.