

A Report on the Elephant Situation in Burma



Charles Begley October 2006

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Cover: Logging elephant dragging uphill.

1. Executive Summary

This report was produced for the EleAid trustees to provide an insight into the current situation regarding the status of the Asian elephant in Burma.

The report is based on a number of references as listed in the bibliography and is supplemented by a research trip carried out between 28^{th} February and 10^{th} March by EleAid trustee, Charles Begley.

No issue in modern day Burma can be considered without referring to the current political and economic situation. This is briefly summarised at the beginning of the report to give the reader some background into the unique difficulties encountered in the country.

The report examines the current situation regarding wild elephants and the problems of obtaining reliable data on population numbers and distribution. Burma has the second highest number of wild elephants in Asia which makes it a crucial battleground in the survival of the species. Analysis is given into the main threats to the elephant in the wild.

Burma is home to the largest number of domesticated or captive elephants in the world, the majority of which are used for work in the logging industry. This report examines the number of domesticated elephants in Burma and gives a historical perspective on the logging industry. It goes on to examine the current conditions for working elephants as well as their management and care. The report also looks at the situation of other captive elephants inside Burma.

Perhaps controversially, given his position in an organisation concerned with elephant conservation and welfare, the author argues that elephants should continue to be used in the logging industry as one of the central features in an overall elephant conservation strategy.

The report concludes that the future of the elephant in Burma is crucial to the survival of the species in Asia and that the successful implementation of a conservation strategy will lead to many positive outcomes. However, a successful elephant conservation policy is currently impeded by the political and economic situation which looks unlikely to change in the near future.

This report is the personal view of the author and does not necessarily reflect the views of EleAid as an organisation or its trustees or members.

2. Political and Economic Background

Due to the all-pervasive presence of the autocratic regime that governs Burma, no study into any aspect of life there can be presented without considering the unique political and economic conditions.

Burma is a south-east Asian country covering approximately 650,000 sq. km. It shares its border with five other countries – Bangladesh, China, India, Laos and Thailand. From the 19th century until 1937, Burma was incorporated into the British Indian Empire becoming a separate, self governing colony in 1937. The country attained full independence in 1948.

Since independence, Burma (also known as the Union of Myanmar) has been subjected to autocratic rule. The only democratic elections were held in 1990 returning a landslide victory for the National League for Democracy (NLD). The military government refused to hand over power and imprisoned the leader of the NLD Aung San Suu Kyi who remains under house arrest.

While the Burmese economy is resource rich, it suffers from excessive government control and inefficient economic policies. Many western countries long ago suspended economic relations with Burma in protest at the government's repressive nature and the United States imposed far reaching sanctions in 2003. Although trade with her neighbours, particularly China and India, is growing Burma is falling far behind in terms of economic and most other measures of development. The GDP per capita of \$1,700 is the lowest in south-east Asia and 25% of the population live below the poverty line.

A large black-market economy flourishes and permeates all areas of Burmese life. In addition to its economic woes, there are significant numbers of ethnic Karen and Shan people who wish to gain independence from the Burmese state and are carrying out forms of armed resistance.

3. Elephants in Burma – Summary

Historically and culturally elephants have played an important role in Burma similar to that found in India and Thailand. Elephants were the work-horses of the pre-mechanised age; they were the battle tanks of the army and were a visual sign of the wealth and power of the nobility. Throughout the country, images of elephants are omnipresent and the use of elephants in religious and cultural ceremonies is still common.

Burma has the second largest population of the world's remaining wild Asian elephants and the largest continuous areas of natural habitat. Burma is also the only country that continues to use elephants on a large scale in industry. As a result of these unique factors, the future of Burma's elephant population is of primary importance to the conservation of the entire species.

4. Legal Status

Elephants were first protected in Burma in 1879 under the Elephant Preservation Act which regulated hunting and capture. The Burma Wildlife Protection Act 1936 (revised 1956) completely prohibited hunting except under licence. The most recent piece of domestic legislation was the wide ranging Protection of Wildlife and Wild Plants and the Conservation of Natural Areas Law 1994. Under Chapter 5 Section 15, elephants are listed as a completely protected species. Hunting and capture is totally prohibited except for scientific purposes - for which a licence is required. (U Tun Aung 2001)

Domesticated elephants owned privately or by the state must be registered with the Forest Department under the Essential Supplies and Services Act, the Burma Act XLVII, 1974 and the Elephant Registration Act 1951 (U Tun Aung 2001).

Internationally, Burma became a signatory of the CITES Treaty in 1997. The CITES Treaty protects the over exploitation of wildlife by restricting international trade in endangered plant and animal species. The Asian elephant is listed as an Appendix I species and as such qualifies for the highest level of protection. All international trade for commercial purposes of elephants or their parts is forbidden.

5. Elephants in the Wild

5.1 Population Data

As with elephant populations throughout most of Asia, the estimates of the remaining population in the wild vary considerably.

The 1990 Asian Elephant Action Plan (Santipillai) rather unhelpfully suggested that the wild population lay somewhere between 3,000 and 10,000. In 1989 Raman Sukumar, widely acknowledged as the world's leading expert on Asia's elephants, studied the amount of available habitat and the minimum likely number of elephants and proposed the figure of 10,000 wild elephants. Many Burmese who were interviewed in the course of a field trip by the author in 2006 were also very confident that Burma's forests had very healthy populations totalling many thousands. However, the official statistics from the Burma Forest Department suggested that in the year 2000, there were only 4,000 elephants living in the wild.

Other figures show an equally confusing pattern. The table below, based on figures collated by the Burma Forest Department figures, shows the randomness of official estimates. They show neither reliable total population data or patterns of population decline.

Year	Wild Elephant Numbers	Source
1942	5,500	Burma Forest Department
1949	5,000	Smith
1950	6,000	Willion
1959	6,500	Tun Yin
1960/61	9,660	Forest Department, Unpublished Data
1962	9,057	Wint-Seim Maung
1969/70	7,340	Forest Department, Unpublished Data
1972	6,000	Caughley
1974	8,500	Hundley, Olivier
1977	5,000	Hundley, Olivier and Others
1980	6,008	Hundley
1980/81	5,508	Forest Department, Unpublished Data
1990/91	6,560	Thet Htun
1991	5000-10000	FAO
1996	4000-6000	Myint Aung, Ye Htut
1999/00	4,000	Forest Department,

Table reproduced from U Tun Aung and U Thong Nyut 2001

Recent data gathering has been no more successful in giving accurate population information. In 2004 the IUCN's Asian Elephant Specialist Group, which is made up of the top Asian elephant experts, updated their figures for Burma's wild elephant population as being between 4,000 and 5,300 (Sukumar 2006).

However another meeting in 2004 presided over by the highly respected Smithsonian Institute and attended by numerous Burmese and international experts, suggested the figure could be as low as 1,130. The author suspects that this is unduly pessimistic and that the IUCN's figures which are more in line with general opinion in Burma are closer to the mark and should be considered the official statistics.

One thing virtually all the experts are agreed upon is that Burma has the second largest population of wild elephants after India. While that figure appears to be unreasonably pessimistic it is widely agreed that Burma's wild elephant population is in decline and that as elsewhere in Asia, urgent action is required if wild elephants are to survive into the next century.

The debate and confusion over the figures illustrate a major problem for elephant conservationists in Burma and Asia as a whole. The lack of reliable data hinders the use of scientific population models, strategic planning and even affects fundraising.

5.2 Natural Habitat and Elephant Distribution

Out of every Asian country which is home to elephants, Burma has the largest remaining intact areas of natural habitat. There is twice as much elephant sustaining habitat as there is in India and Thailand combined. Forest, of all types, account for 49% (233,220 km sq) of Burma's total land use (FAO 2005).Virtually all conservationists are unanimous that

these vast natural areas offer the best hope for large sustainable wild elephant herds in the future.

With regard to distribution, wild elephants are found throughout Burma, but accurate data on population distribution and clusters is difficult to find. The most recent distribution study emanates from a series of meetings arranged by the Smithsonian Institute in June 2004. Using a variety of techniques the group compiled the following distribution map.



Elephant Distribution in Burma (Smithsonian Institute 2004) (The net population figures are far from universally accepted)

However, the meetings identified that there were no elephant herds with populations over 150 animals and these figures are questionable. The 1990 Action Plan for the Asian Elephant (IUCN Asian Elephant Specialist Group) identified two populations of over 1000 and five of over 500 therefore, such a huge change would be open to question.

Future conservation efforts are likely to be severely hindered by the data problem and although there are immense practical difficulties in studying wild elephant demographics, they must be addressed. Planning conservation projects based on hearsay and guesswork is likely to lead to problems with funding and management.

5.3 Threats to Wild Population

5.3.1 Elephant Capture

The capture of elephants for use in the timber trade is possibly the biggest threat to the survival of wild elephants in Burma.

Elephant capture has been practised throughout much of Asia for thousands of years. Legal elephant capture has almost entirely ceased elsewhere in Asia and is against the law for all but scientific purposes in Burma. However due to the demands of the logging industry it is known that wild capture continues, sometimes officially sanctioned with official permission, sometimes not.

Historically, large numbers of elephants in Burma were caught and trained for work. U Toke Gale (1974) records that between 1910 and 1927 an average of 440 elephants were removed from the wild every year. From 1945-1967 that average had fallen to 116 a year but during the same time, the number of wild elephants had become severely depleted so the ratio of captures to total elephant population in those years was more significant.

The impact of captures on viable elephant populations is magnified by the fact that the hunters deliberately target the areas with the highest concentrations of elephants - more elephants means less work and higher capture success rates. However, concentrating hunting on the largest population cluster results in the breaking up of the most viable and sustainable herds and the further fragmentation of the total wild elephant population.

By the 1970's the effect of elephant captures began to raise serious concerns and the government set quotas for wild captures.

YEAR	CAPTURES	QUOTA
1980-81	75	200
1981-82	76	150
1982-83	44	120
1983-84	35	120
1984-85	28	120
1985-86	28	120
1986-87	33	120
1987-88	39	120
1988-89	20	120
1989-90	29	120
1990-91	22	60
1991-92	23	-
1992-93	15	-
1993-94	13	-
1994-95	2	-

Myanmar Timber Enterprises Elephant Captures and Quotas Cited by Dr. Khyne U Mar and published by Lair (1997)

The table above shows the numbers captured between 1980 and 1995 by the Myanmar Timber Enterprise (MTE). There is no accompanying explanation for the failure to catch the full quota.

Wild capture was supposedly banned under the 1994 legislation Aung 2001, (Lair 1997) but during a fieldtrip in 2006, the author interviewed an elephant hunter who claimed he

worked on official captures for the MTE (a state run body) every year. He claimed to have personally caught over 300 elephants over a 40 year period. He told in great detail of a hunt the previous December (2005) when 17 elephants were caught. When asked how many elephant hunters there were like him he simply replied 'Many'.

In addition to the official MTE captures it is known that illegal capture is common. Official MTE data records 102 cases (presumably where the culprits were caught) between 1982 and 1995.

Outside of the official and semi-official capture of elephants for the timber trade, there is evidence of substantial levels of illegal capture. Lair (1997) cites Aung Myint in 1994 claiming significant levels of 'illegal offtake'. This is especially prevalent in border areas where the animals are subsequently smuggled to Thailand. Lair recalls his own experiences in finding young calves in Thailand and quotes on Thai mahouts who claim up to 50 calves a year are smuggled to Thailand.

During the research stage of this report the author spoke to numerous sources in both Thailand and Burma who claimed that the practice of capturing and smuggling calves to Thailand for use in the tourist and entertainment industry was rife. One claimed 'the hunters are actually capturing baby elephants to order - according to the needs of the elephant shows.' It should be noted that calf catches almost invariably require the mother, and possibly other members of the herd to also be captured or, more often than not, killed.

A final factor to take account of when considering elephant captures is the mortality rate which can be alarmingly high. Lair (1997) quotes two sets of statistics covering elephant capture between the early 1970's and early 1990's. Both studies show mortality rates of around 20%, which Lair ascribes mainly to post capture care and the breaking and training process.

Elephant communities are notoriously secretive when on the issue of the breaking and training of wild elephants and calves born into a domesticated environment. On the few occasions that outside observers have been able to watch or film the process there has been widespread condemnation of the brutality of the methods used. The elephant hunter interviewed during the March 2006 fieldtrip readily admitted that one of the 17 elephants captured in December 2005 had died in training.

5.3.2 Habitat Loss and Fragmentation

Despite the huge areas of forest remaining in Burma, deforestation and the resulting loss of elephant habitat is a major threat to the survival of viable populations of wild elephants.

Burma's forests are under the authority of two organisations. The Forest Department are responsible for the conservation and management of the forests while the state owned Myanmar Timber Enterprise (MTE) undertakes extraction and utilisation of forest resources. (U Khin Saw 2003) The management of the forests is supposed to follow operational guidelines outlined in the Myanmar Selection System (MSS), which was first developed by the British in 1856. The system involves a number of management methods for controlling timber extraction, including a 30 year felling cycle and the fixing of annual timber yields by the Forest Department. The system was designed to allow the extraction of valuable hardwoods in a way that maintained both the integrity and sustainability of the forests indefinitely. However, evidence suggests that this system is being bypassed and breaking down in a dramatic way.

In 2005, the FAO reported that between 1990 and 2005, Burma lost 17.84% of its total forest area and that the rate of loss was increasing from an average of 1.19% during the 1990's to 1.35% today. The FAO also reported that 100% of all Burmese forests had been degraded as a result of logging. Currently, only 7% of Burma's remaining forests are listed as protected areas (Leimgruber 2003). The main causes of deforestation are twofold; conversion to agriculture and the timber industry.

Population pressure, particularly in lowland areas, has resulted in substantial permanent conversion from jungle to agriculture, a problem that is only likely to grow worse in the future. In 2003, Castren reports that population pressure in the lowland areas has resulted in these areas having a deforestation rate of twice the national average.

The timber trade is vital to Burma's economy. In 2001, timber raised US\$280 million of Burma's recorded foreign exchange income - 11% of the total. In 2003/04, that figure had risen to US\$377 million and in 2004/05, total forest products raised US\$427 million, 15% of foreign earnings (Global Witness 2006).

These official statistics only show part of the picture. According to Burmese government figures, 18,000m³ was exported across the border to China and another 27,000m³ through Rangoon. (Global Witness 2005). Official Chinese figures show that during the period 2001-2004, between 800,000 and one million m³ were imported annually. Global Witness reports that, 'large swathes of pristine forest in the northern Kachin state have entirely disappeared and the problem is getting worse.'

This loss of habitat throughout Burma has greatly reduced the amount of elephant habitat and in turn has lead to shortages of food and the reduction of the capacity to support viable long term elephant populations.

Habitat loss also increases the incidence of conflict with humans. When former areas of forest are converted into agricultural land, wild elephants resort to crop raiding as an easy food source. This often results in elephant deaths - elephants are killed by farmers who are protecting their livelihood. It is also common for people to die in conflicts with elephants.

The fragmentation of habitat also causes serious problems. Wild elephants travel over huge areas and the break up of their range disrupts seasonal migration routes. This disruption causes confusion, distress and increased conflict with humans. Both Aung and Nyunt suggest that disruption has resulted in decreased birth rates.

5.3.2 Poaching

It is certain that poaching for ivory, meat, hide and 'medicinal' parts does occur as reported in many sources (Aung 2001) (Shepherd 2002), but as one might expect from a criminal enterprise no hard data is available. Shepherd writes that a number of sources in Burma allege that elephants throughout the country are not generally killed for their ivory and that ivory for the carving trade can be obtained through the Forest Department auctioning tusks recovered from dead wild or working elephants. Some ivory was also imported from outside Burma.

Shepherd's findings concur with the author's own experiences of speaking with sources in Burma. It was widely claimed that tusked elephants were too valuable to be killed for their tusks alone. After death, an elephant's ivory can be removed and sold thus presenting the owner with an extra financial return after a lifetime's work in the timber trade.

6. Domesticated Elephants

6.1 Summary

Burma has the highest population of domesticated elephants in the world and is the only country where they are still employed on a major scale in any industry.

It is generally accepted that domesticated elephants have been used in Burma for almost 2,000 years (Aung 2001). Depictions of the use of war elephants in Burma date from 1044 AD with elephants playing a role in all conflicts up to and including World War II, when both the British and Japanese used elephants for building and transportation.

The main employer of elephants is the Myanmar Timber Enterprise. They own some of the elephants who work for them, but the majority are hired along with their mahouts from private owners on a contracted basis.

6.2 Population Statistics

Working with estimates extrapolated from Gale (1974) and Williams (1950), Lair calculates that there were about 10,000 elephants working in the timber industry before World War II. From that figure, he further calculates that there were upwards of 15,000 domesticated elephants in Burma before the war, possibly as many as 20,000. However, the conflict led to a dramatic decline in the number of working elephants and by 1945 there was estimated to be only 2,500 domesticated elephants remaining (Gale 1974). After the war, demand for working elephants was fuelled by a resurgent timber industry and capture rates increased dramatically.

The MTE employed the following numbers after the war:

	MTE		
Year	Owned	Hired	Total
1962-63	1526	1336	2862
1988-89	2959	2290	5249
1999-2000	2715	1360	4075

Figures reproduced from Aung (2001)

Unfortunately it is impossible to be certain to the reliability of the figures as on the same page Aung cites official Forest Department registration figures for 1999-2000 as:

	Male	Female	Total
Forest			
Department	7	5	12
MTE	737	935	1672
Private Owners	762	<u>1095</u>	1684
	1506	2035	3541

The discrepancy between the two figures of private ownership can be readily explained as not all private elephant owners work for the MTE, but what is more difficult to unravel is the difference in elephants owned by the MTE which shows 1,043 elephants as not being registered. Some of the disparity might be explained by the fact that elephants under the age of five years old do not have to be registered, but this certainly could not explain the entire shortfall. It can only therefore be assumed that either the MTE does not register all of its elephants or the Forest Departments records are incomplete.

The problem of the official figures being so questionable is further compounded by elephants that are not employed by the MTE and also those that are unregistered. In 1997, Lair argued that there are likely to be higher number of privately owned elephants including those unfit for logging (up to 40% of the total number) as well as what he claims are 'sizeable numbers of unregistered animals in remote areas'. Lair calculated that the 'most likely' number of domesticated elephants was 6,400 and perhaps there are not many less than that today.

7. Working Timber Elephants

7.1 Historical Perspective

In his 1950's book, 'Elephant Bill', J.H. Williams called the elephant 'the backbone of the teak industry'. In this book, Williams also describes the operation of the logging industry in Burma between the wars. Teak grows best in steep precipitous country about 10 trees to the acre. Only the most mature trees were chosen on a logging cycle of 25 to 30 years. Under this system, the teak forests would never be exhausted.

Selected trees were girdled (killed at the stump) for a period of three years before felling. The logging locations were sited in deep forest, inaccessible to vehicles and the elephants would be brought in to drag the trees to the nearest water course capable of floating the logs in the monsoon season. The felled logs would travel down streams and rivers until they reached main waterways where they were made into rafts and floated to Mandalay or Rangoon to be milled and then exported.

The condition of the working elephants was extremely important to the efficient running of the teak industry. 'The health, management and handling (was the factor) on which everything else depended', wrote Williams. He describes in some detail the regular inspection of the animals by British forestry officials for injuries that could prevent an elephant from working such as chafing wounds from the drag chains. Every elephant had a book in which their history's and other details like registration number, temperament and medical history were recorded. Sick elephant's were given time off work and overloading and overworking was strictly forbidden.

Calves began training at five years old and until the age of 17 were used for light duties; transportation and baggage. By the time they reached adulthood at 17, each animal had been assessed for its suitability for work and began logging.

Working periods and hours were closely controlled. Elephants worked for nine months of the year between June and February, stopping for the hottest months of March, April and May. Each working month consisted of 18 days labour on a pattern of three consecutive working days followed by two days rest. Elephants would work for between five and eight hours a day and when they weren't working; they would be free to browse in the forest, although they would be restricted by hobbles. Working elephants were retired at 55.

Concern for the elephants' health was not prompted by enlightened benevolence (although many in the industry clearly came to love and respect the elephants) but pure self interest. A fully trained working timber elephant represented an enormous investment in time and money over many years. Ruining an animal through overwork or overloading was inefficient and counter to the long term interests of the firm.

7.2 Logging Today – Observations on a Fieldtrip March 2006

All legal logging is carried under the auspices of the state owned Myanmar Timber Enterprise (MTE). According to all the MTE, public relations material logging is carried out in much the same way as it was under the British. Several oozies (as mahouts are called in Burma) interviewed by the author also confirmed that this was the case. They claimed that logging was still selective and that trees were girdled three years before cutting.

However, from the author's experiences it is clear that a further level of industrialisation has been added to the process since colonial days. Rather than relying on the elephants to drag felled timber to waterways, the MTE have cut dirt roads, where possible, deep into the forest to allow trucks to bring the timber out rather than wait for the rainy season. One

road travelled by the author entered the forest to the west of the town of Toungoo. The town had been bulldozed and clearly existed for the sole reason of extracting timber.

Throughout the two days the author spent in the forest, fully laden timber lorries frequently rolled by. The local guide claimed that up to 70 loads were extracted every day, each holding up to 20 fully mature trees. The author observed from areas of high ground that much of the logging appeared to be selective with the integrity of much of the forest for as far as the eye could see largely intact. However, at one point the road passed for five miles through an area which had been clear cut. The forest had recently been entirely decimated, presumably for agriculture.

Overnight, the author stayed with a small logging team consisting of four mahouts and three elephants (two female and one male.). The elephants were free to roam in the forest overnight although, similarly to when the British managed the industry, the elephants were restricted by long heavy drag chains to ensure they did not wander too far.

The elephants were generally in good health and were clearly well fed, fit and robust. There was some evidence of scarring on the heads of two of the elephants, possibly remaining from their original training, but no fresh marks and no obvious signs of regular physical abuse. There were some sores and abscesses caused by the rubbing of drag chains but nothing excessive. All of the elephants had been 'branded' with the mark of the MTE and their registration number which was burned into the skin by some kind of acid.

The next day, the three elephants were quickly found and brought to the mahout camp early in the morning. They were bathed in an inadequate stream and then hitched up to their dragging gear. The walk to the logging site was about three miles.

At the dragging site, the trees had already been felled and holes drilled to allow the threading of the drag chains to be attached. The elephants were each hooked up to separate trees between 3 and 5 metres in length. When choosing which tree to allocate to which elephant, the oozies acted in a seemingly random matter. The largest log was given to the smallest elephant while the big tusker was given a proportionally much lighter load. The local guide and mahout seemed unable to answer why this was the case and were unconcerned.

The logs needed to be pulled up quite a steep incline and along steadily rising ground to the dirt road; a total distance of about two miles. The steep drag was difficult for all of the elephants and they were all straining and pulling hard. It caused particular problems for the smallest elephant (with the largest load). She cried out with each pull and was clearly in great distress, which was difficult to witness. In addition to the burden of the weight, the chains opened sores on both of her flanks.

It took about an hour and a half before the elephants were able to complete the drag and the two females looked very tired. The tusker seemed less affected and very skilfully manipulated the three logs to add them to a stack awaiting pick up by lorry. The elephants and the oozies then left to repeat the process.

It is interesting to note that these logging operations were witnessed in March during the hot season. The author was also informed that there were many other elephant logging operations working in the vicinity at that time. This would appear at odds with the regulations which state that, 'The work year for MTE elephants comes to an absolute stop on February 15, no matter what the weather, to enter a hot season rest period; the next season's work normally begins on June 15' (Lair 1997).

7.3 Conditions for Logging Elephants Today

Lair states that 'The MTE firmly believes that humane treatment is ultimately more productive than cruelty or coercion'(1997). The conditions of working timber elephants are regulated by the MTE Extraction Manual (U Khin Zaw 2003), Part 4 of which specifically concerns elephants. The manual deals with general conditions and issues such as training, medical care and other issues. It is unknown whether a copy of the manual is available in English but the author was unable to obtain a copy in any language.

Lair summarises the elephant's categorisation of elephants by age as:

'Calf At Heel (under 5 years), Trained Calf (5 to 17 years), and Full Grown (18 years and over).

Calves are normally weaned when five years old and it is only then that they undergo serious training: being taught to stand still, kneel, lift a foot to receive fetters.

Trained Calves under 12 years are taught only basic command words and made familiar with fetters and dragging harnesses; after 12 years, they are taught the basics of how to skid or *aung* but are given only light work, mostly serving as baggage elephants. Skidding logs begins only at 18, though even then the animals are gradually eased into heavy work..... Elephants are graded into five classes of capacity for work so as to ensure that they are not overworked; First Class elephants, for example, are between 30 to 45 years of age, 'stout and healthy' and have a haulage capacity of more than two tons.'

Lair also states that the MTE's working elephants are retired at 55, although a number of oozies interviewed by the author dismissed this suggestion and claimed that elephants were worked until they were literally incapable of performing their duties or they died.

There is no doubt that the working life of a timber elephant is hard. While this work witnessed by the author appeared difficult enough, it was not as arduous or dangerous as many other tasks the elephants undertake. The elephants, the author observed, followed a well defined path when bringing the timber out of the forest but in other areas, one or a team of elephants, must drag even bigger logs through far more exacting terrain. Thicker vegetation, steeper hills and perilous precipices are all obstacles to be surmounted. These tasks are difficult and dangerous and place extreme demands on both elephants and oozies.

In the more remote areas, rivers in flood are still used to transport logs to weigh stations downriver. On occasion, the logs can become jammed where the watercourse narrows and form a dam of giant pick up sticks. Elephants are used to clear the jams in a process known as 'yelaiking'. The elephants are called upon to carefully pick the logs out one by one. This work, often involving several tusked bulls working in a confined space and dealing with huge pieces of timber, is exceptionally skilled and dangerous in the extreme. Deaths of both elephants and oozies are common in these circumstances.

There is a great deal of hardship in the life of both working elephants and their oozies, but in many ways the current situation reflects the continuation of a way of life that has existed largely unchanged for centuries. The Burma logging industry in effect represents a living museum which displays a way of life that has long since disappeared in the rest of the region.

7.4 Mahout Standards

Without doubt, the oozies of Burma are the best trained and most skilled mahouts in the world. Throughout much of the rest of Asia the standard of mahoutship has dropped significantly, but Burma's international isolation and the continuation of a traditional way of life, as outlined above, has ensured that traditional skills and knowledge which are lost elsewhere are alive and well.

The mahouts that were witnessed on the fieldtrip were highly skilled and able to control their elephants largely through their body and foot movements, supplemented with the occasional verbal command. From what the author was able to observe, ankushes were not used although they may have been kept out of sight but ready to hand.

According to Lair in 1997, all Burmese mahouts come from a tribal tradition and belong to one of five cultural or ethno-linguistic groups: Karen, Shan, Kachin, Kadu, and Bama. Links to the past still remain and within these traditions, mahout skills are still passed on from father to son, but it is clear that the ties to the old ways of life are weakening.

Lair states that the MTE is finding it increasingly more difficult to recruit mahouts due to the isolation of jungle life and the very low wages. Certainly on the fieldtrip the mahouts that the author interviewed had very low morale and they claimed to be paid the local equivalent of US\$10 per month.

Lair laments the scarcity of recorded information on the techniques and beliefs of the elephant keeping tribes of Burma. The specialist elephant knowledge that has been accumulated through verbal tradition over centuries is already being lost. It would be tragic if an attempt is not made to study and record this unique culture and the relationship between man and elephant before it is lost to the world forever.

7.5 Veterinary Care

As stated above, the health of working timber elephants is important for economic reasons and as a result, veterinary knowledge and care in Burma has been and remains the world leader in this field. G.H Evans (1900), G Pfaff (1940) and A.J Ferrier (1945) all produced seminal veterinary works based on their experiences of working in Burma.

Today there are around 90 trained veterinarians working almost exclusively with elephants.

Organization	Graduates	Dip. in Vet. Med.	Total
MTE	19	58	77
FD	10	-	10
Total	29	58	87

U Tun Aung and U Thoung Nyunt - 2001

MTE employ a veterinary staff of around 60 people and as well as providing care for their working elephants invest in primary research (Lair 1997) and constantly update knowledge through both research and practical experience.

All elephants working for the MTE are inoculated against the threat of haemorrhagic septicaemia and anthrax. However, due to the difficulties of treating the animals in forest locations, modern methods are often secondary to traditional herbal remedies. Many of these natural treatments are used out of conviction of their proven efficacy rather than pure necessity.

Ongoing research and the updating of knowledge through both academic study and practical experience continues among the dedicated vets working with Burma's elephants (Aik 2004) but further research and the recording of findings into both traditional medicines and modern veterinary methods would be an extremely valuable field of study.

7.6 Captive Breeding

In the past, breeding for the needs of the timber industry was largely dismissed on the grounds that it was far easier to capture from the wild and the 20 year wait for a baby elephant to become fully productive was deemed impractical. However in his book, Williams wrote that his company, the Bombay Burma Company, felt that elephant calves born in captivity were more easily trained and that when the company's herd had reached 2,000 elephants it was self sustaining with births balancing deaths.

The ban on the capture of wild elephants in 1994 has forced the MTE to focus on encouraging their captive elephants to breed to maintain the pachyderm workforce. Both Lair and U Tun Aung refer to captive breeding efforts, but Aung admits in a reply to the question at the 2001 FAO Workshop on Domesticated Elephant that the captive elephant population would decline before it started to grow again. This may provide an explanation for the continuation of elephant capture.

8. Other Working Elephants

8.1 Other Work

Although the vast majority of captive elephants in Burma are engaged in timber work, others do perform a variety of other tasks.

- Village elephants many villages, particularly those in more isolated areas, will keep one or more elephants for a variety of jobs
- Transportation and baggage elephants particularly in mountainous forest areas where the only alternative to using elephants is to travel by foot. Not only do the MTE and villagers use elephants in this way but it is also reported that the guerrilla Shan State Army and the Karen National Liberation Army use elephants to get around.
- Ceremonial Use for religious and state functions
- Tourism both elephant shows and jungle trekking, although this industry is far less developed or widespread as in neighbouring Thailand.
- Agriculture, especially on difficult terrain

8.2 The White Elephants in Yangon

One of the most upsetting events of the fieldtrip was a visit to see the white elephants of Yangon, the old Burmese capital.

Elephants displaying certain pale characteristics and known as white elephants were traditionally kept by south-east Asian royalty as a symbol of their power and prestige. These rare elephants are still revered today and the government has put four of them on public display in Yangon.

Unfortunately, they are kept in appalling conditions. The elephants are chained in a covered concrete area about of about 200 square metres. Each elephant is chained in a separate corner on a ridiculously short chain less than two meters long and is unable to have any contact with the other elephants. All four elephants exhibited signs of great mental stress; ceaseless rhythmic rocking of the body and a monotonous rolling of the head.

It was incomprehensible as to why the elephants were kept in such appalling conditions particularly given the elephant's supposedly revered status and when the area around their display consisted of richly landscaped gardens.

9. Conservation and Welfare Projects

Due to sanctions and Burma's isolation from the international community, very few organisations are currently working on the issue of elephant conservation and welfare in Burma. Most conservation and welfare work is therefore carried out by self regulating (other than political control) government bodies; the Forest Department, MTE and the Livestock Breeding and Veterinary Department. All of the authors' research suggests that these bodies are highly motivated to care and protect Burma's elephant population although other factors outside their effective control, for example illegal logging supported by the military, act to limit their effectiveness.

Certainly the Burmese organisations seem willing, even keen, to cooperate and work with outside organisations when such assistance has been available. This is illustrated by work with the Smithsonian Institute and the Wildlife Conservation Society as well as a number of smaller academic research projects.

More involvement, particularly from the big wildlife NGO's would be beneficial in improving both the quality of the data from Burma as well as the emergence of well supported strategic plans to conserve the wild elephant populations. While it is understandable that the NGO's do not want work, or may be unable to finance operations in a pariah state with a very high likelihood of political interference, the issue of elephant conservation is unlikely to be greatly advanced without their involvement.

10 The Dilemma of Working Elephants

In a conservationist's perfect world, all logging in Burma would cease and the rich ecological diversity of the forests would be preserved as national park. The logging elephants would be released back into the jungles, which when combined with the wild elephants would provide Asia with its most viable wild elephant population.

However, the vision outlined above is likely to prove just a pipedream. Burma's government and any likely future government are almost certainly going to continue the economic exploitation of the forests. The country is too economically weak and the hardwoods too valuable on the world market for the pursuit of a more environmentally driven policy. That being the case, it is surely better from a conservationist's point of view that the forests are selectively logged within the parameters of the Myanmar Selection System (MSS) as described above. This system is designed to protect the integrity of the forest and would provide the much needed habitat for an extensive population of wild elephants. The difficulty for the elephant lover is that the MSS depends on the use of domesticated elephants for the extraction of the timber.

The security of the habitat for a healthy wild population can therefore be provided through the labour provided by their domesticated cousins. By continuing to use elephants to extract the timber, the forests can be preserved yet still harvested for economic gain. That leaves the elephant lover with a difficult question: 'is this labour a fair price to pay for the continuation of healthy wild herds and the survival of the forest tracts?'

Any answer would have to be the result of personal preference and how an individual balances the importance of conservation versus welfare. However, if logging operations continue to ensure the good health and well being of the elephants under their care, as well as concentrating on captive breeding to fulfil the needs of the industry rather than wild capture, the author would conclude that on balance it is a price very much worth paying. In fact it is almost certainly the key that will allow for a successful large scale conservation strategy in Burma.

11. Conclusion

The survival of healthy, sustainable herds of wild elephants in Burma is vital, not just for the future of the Asian elephant but also for the preservation of Asia's rich, ecologically diverse heritage.

The elephant is a keystone species in the jungles of Burma. As the largest animal in the forest, requiring the most living room, if the elephant can be protected it will help towards the survival of all the other endangered species in the area. These include the tiger, the Sumatran and Javan rhinos, sun bears, gibbons, red pandas, clouded leopard, Asiatic golden cats, gaurs, tapirs and many more (IUCN Red List). The battle for the elephants' survival is therefore a battle in which all indigenous species have a stake.

In many ways, Burma is the ideal place for the conservation lobby to make its stand. The main advantage is an elephant population that is currently sustainable and the large forest reserves. Although they are under unprecedented threat, the forests of Burma are still the largest remaining extensive wild lands in Asia.

The fight to protect the forests could have an unlikely ally in official government policy, which is to log within the confines of the Myanmar Selection System, taking out only mature hardwood and leaving the rest of the forest in place. If this policy can be strengthened and a concerted crackdown implemented on the rampant illegal logging, there would be a stable platform on which to build a world class conservation policy.

Such a policy could have enormous economic benefits; the government could not only continue to derive a substantial income from the timber trade, but could also use extensive natural areas and an enlightened environmental policy to build a major ecotourism industry. The income from such a business could match or even surpass that of timber exports.

There are other reasons to support a major elephant conservation effort in Burma. Not only is the elephant held in high esteem among the population at large, but the country has the largest number of elephant experts in Asia. The combined knowledge of the Forest Department, the MTE, the Livestock, Breeding and Veterinary Departments and private individuals far surpasses that which is available elsewhere. In elephant tradition, management, veterinary and handling skills seen in Burma lead the world by some distance. These resources could be of immense value if they could be utilised within a strategic plan for elephant conservation.

The advantages that Burma offers for Asian elephant conservation are hampered by the country's economic and political problems. The current regime is a pariah state and most countries or international NGO's are not inclined to get involved in any way with the

Burmese government. As a result, both financial and technical resources are simply not available to help draft or even work towards a cohesive elephant conservation strategy.

Burma's international isolation has resulted in a very weak economy with an outdated and inefficient infrastructure. This makes it very difficult to successfully complete any undertaking without enormous problems arising. The prospects therefore of building a major eco-tourist industry may take years and that is something that could not even begin to take place until the current call for a tourist boycott has ended. Burma is also blighted by greed and corruption at a high level. The reason that illegal logging is so rampant in parts of the country is because senior officials and military officers are profiting from the trade and are immune from any prescription of their activities.

Conservationists are by their very nature optimists. There are so many hurdles to cross in the battle to preserve nature and wildlife that if they were not able to be positive and hopeful about the future, they would surely give up. For that reason, elephant conservationists should remain hopeful about the future in Burma - for if there is anywhere in Asia where there is real hope of sustainability of significant numbers of elephants, it is here. However for that dream to become a reality and for an effective conservation strategy to be implemented regime change is a necessity and at present that looks to be a day in the distant future. We can only hope that the elephant population and the forest tracts can survive until that day comes.

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An oozie dismounts before giving his elephant a wash in a muddy stream

An oozie attaches drag chains



The strain shows as one of the elephants drags uphill



Brand and registration number of the MTE



A sore developing where the chains are rubbing



An area of clearcut where the forest has been decimated for agricultural use

Three logging elephants in convoy





An elephant being used to plough a field (Sai San Aik)