

# Elephant Action Plan



**2012 - 2016**



**Sabah Wildlife Department**  
Ministry of Tourism, Culture and Environment

# ELEPHANT ACTION PLAN

The compilation and editing process of this Elephant Action Plan was led by the Director of Sabah Wildlife Department, and supported by the Species Action Plan Committee Members.



*Published by*

Sabah Wildlife Department  
5th Floor, Block B, Wisma MUIS Complex  
88100 Kota Kinabalu

*With assistance from*

Borneo Conservation Trust, Borneo Rhino Alliance,  
Danau Girang Field Centre, HUTAN, and  
Malaysian Palm Oil Council.

December 2011

Citation: Sabah Wildlife Department 2011 Elephant Action Plan.  
Kota Kinabalu, Sabah, Malaysia.

Front cover photo: © Sabah Wildlife Department / Sen Nathan

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of the copyright owner.

ISBN: 978-983-40057-6-4

Printed in Kota Kinabalu



## EXECUTIVE SUMMARY

The goal of this Elephant Action Plan is to emphasise the need for immediate, practical and adaptive conservation actions to ensure the long-term survival of the species in Sabah. This document is a revision and an update of the 2002 Asian Elephant Action Plan Sabah, and the result of an extensive consultation process initiated during the “International Workshop on the Conservation of the Bornean Elephant in Sabah” (Kota Kinabalu, May 2008). It presents a consensus of recommendations raised by the major stakeholders involved in elephant population management in Sabah.

Recent surveys carried out by the Sabah Wildlife Department and WWF-Malaysia provide a number of 2,040 elephants in Sabah (Alfred *et al.* 2010). This number cannot be reasonably compared to the estimate that was provided in the 2002 State Action Plan, as the methods used 10 years ago were not the most reliable. Wildlife experts believe that drastic habitat loss due to conversion of large areas of elephant habitat to oil palm plantations and increased fragmentation between the main elephant ranges must have had a negative impact on the elephant population.

The long-term survival of the species in Sabah will depend on the close working collaboration from all relevant Government departments, private industries (agriculture and logging companies), NGOs and local communities.

The primary objectives of the Elephant Action Plan are the following:

- 1) For the State, to officially create, empower and mandate the “Bornean Elephant Conservation Alliance” (BECA) to develop a venue for better communication and collaboration between all partners involved in elephant conservation. Led by the Sabah Wildlife Department, BECA will be primarily in charge of implementing this SAP and gather all state agencies and relevant partners to tackle elephant conservation. Within BECA, to establish a “Sabah Elephant Conservation Unit” in charge of (i) liaising with all

partners involved in elephant management in the field; (ii) developing and promoting peaceful HEC mitigation techniques; (iii) promoting awareness; (iv) identifying problem areas; and (v) documenting continuously the elephant situation in Sabah.

- 2) Every management plan designed for any natural forest or plantation with elephants should be in line with the recommendations developed in this Action Plan.
- 3) Upgrade the status of the Bornean elephant to Part 1 of Schedule 1 of Totally Protected Animals, under the Wildlife Conservation Enactment 1997 of Sabah.
- 4) Secure the long-term viability of the elephant populations in Sabah.
- 5) Promote zero poaching/killing through strict law enforcement and synchronized awareness programs.
- 6) Officially declare the four important elephant areas as Managed Elephant Ranges (MER) – Lower Kinabatangan, North Kinabatangan, Tabin, and Central Sabah – with a commitment to natural forest management and connectivity measures.
- 7) Design and implement a proper monitoring system of the four managed elephant ranges.
- 8) Creation of corridors between the four Managed Elephant Ranges: linking the Lower Kinabatangan Range to the Northern Kinabatangan Range and to the Tabin Range; linking the Northern Kinabatangan Range to the Central Sabah Range; and to evaluate the possibility of corridor establishment along the Tingkayu river between Ulu Kalumpang Range and Central Sabah Range.
- 9) Encourage research into all aspects of the ecology, behaviour, population dynamics and genetics of the species in Sabah, and create a database that would store all the corresponding data.

- 10) Promote the value of the Bornean elephant as an asset for tourism development, and ensuring that a percentage of benefits go directly to programs that will aid local community development projects. Develop sound and achievable guidelines for tourism activities to minimize the negative impacts on the elephant movements and behaviour. Increase local and national awareness, and perceptions on the need to protect elephants in Sabah.
  
- 11) Unless as part of a government-to-government initiative and with the State Cabinet's approval, the exportation and/or relocation of Bornean elephants out of Sabah will not be considered as an option in the ex-situ conservation of this species. Priority will be given to the establishment of a Bornean Elephant Sanctuary (BES) under the guidelines of BECA. This sanctuary will act under the premise of rescuing orphaned, displaced and injured wild elephants with the ultimate goal of translocating suitable animals back to their natural habitat.



# TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	Origin and taxonomy	1
1.2	Socio-ecology	2
1.3	Past distribution and population trends	3
1.4	Legal status and legislation	3
1.5	Current major threats	4
<b>2</b>	<b>CURRENT DISTRIBUTION IN SABAH AND SITE DESCRIPTION</b>	<b>8</b>
2.1	Lower Kinabatangan Range	8
2.2	North Kinabatangan Range	8
2.3	Central Sabah	9
2.4	Tabin Range	11
2.5	Ulu Kalumpang Range	12
<b>3</b>	<b>NON-SITE SPECIFIC PRIORITY ACTIONS</b>	<b>14</b>
<b>4</b>	<b>SITE-SPECIFIC PRIORITY ACTIONS</b>	<b>19</b>
4.1	Major Elephant Ranges	19
4.2	Other Ranges	20
<b>5</b>	<b>EX SITU CONSERVATION EFFORTS</b>	<b>21</b>
<b>6</b>	<b>ELEPHANT ACTION PLAN IMPLEMENTATION, MONITORING AND EVALUATION</b>	<b>22</b>
6.1	EAP implementation	22
6.2	EAP monitoring and evaluation	23
6.3	Detailed 5-year plan	24
	<b>LIST OF ABBREVIATIONS</b>	<b>25</b>
	<b>REFERENCES</b>	<b>26</b>
	<b>SPECIES ACTION PLAN COMMITTEE MEMBERS</b>	<b>27</b>
	<b>WORKSHOP PARTICIPANTS</b>	<b>28</b>





# 1 INTRODUCTION

## 1.1 Origin and taxonomy

The origin of the Bornean elephant is still very controversial, despite the publication of a genetic study by Fernando *et al.* (2003) indicating the distinctiveness of the Bornean elephant and its derivation from Sundaic stock. The authors also claimed independent evolution of the Bornean elephant for some 300,000 years since a postulated Pleistocene colonization and recognised it as native to Borneo and as a separate evolutionary significant unit.

However, it is hard to believe that a taxon assumed to be present in Borneo for more than 300,000 years and therefore subject to evolutive pressure presents only one maternal lineage, as compared with orangutans or proboscis monkeys, also present on the island since the Pleistocene, which harbour several maternal lineages (Jalil 2007; Jalil *et al.* 2008). More strikingly, there have been no authenticated or confirmed finds of Asian elephant in any controlled excavation, including in Niah cave (Sarawak) and in Madai cave (Sabah, within the species' present range) although other large ungulates (*Rhinoceros sondaicus* and *Dicerorhinus sumatrensis*, *Tapirus indicus*) were represented.

Therefore, a new theory arose from these findings: elephants from Java were sent to Sulu at the end of the 14<sup>th</sup> century as a gift between royal personages, proliferated on the island and subsequently provided the founder members of the existing population of northeast Borneo (Cranbrook *et al.* 2008). But it is not clear when the founders and how many of them were translocated to Borneo by the sultan of Sulu. There were still reports of elephants present on Sulu island until the beginning of the 19<sup>th</sup> century, but they were finally exterminated by 1850. Therefore, Borneo could be the refuge of the Javan elephant and *Elephas maximus borneensis* the descendant of *E. m. sondaicus*. More research is needed to confirm this hypothesis.

Nevertheless, the debate on the origin of the Bornean elephant should not lead us astray from the fact that it is unique and that it deserves conservation efforts. Indeed, our Bornean elephant harbours many

distinctive characteristics such as: smaller size, larger ears, straight tusks, a long tail that hits the ground; as well as some behavioural differences such as breeding at an earlier age and an inter-birth interval shorter than other subspecies.

Currently, the Bornean elephant is considered as an evolutionary significant unit, deserving proper conservation measures (Fernando *et al.* 2003).



Elephant herd along the Kinabatangan river. Photo: SWD-DGFC/ Rudi Delvaux

## 1.2 Socio-ecology

The elephant is a polygynous species. One demographic consequence of polygyny is that sex ratios especially of adults, are biased towards females. This is because males suffer higher death rates for several reasons. Males pay an additional metabolic price in the process of attaining a larger body size, making them more susceptible to nutritional stress and diseases. In addition, there are higher costs with male-male competition and risks inherent in emigrating from the natal family.

### **1.3 Past distribution and population trends**

Wild elephants only occur in the northeastern part of the island of Borneo, astride the international boundary between Malaysian Sabah and Indonesian Kalimantan. In Sabah itself, they occur in forested areas in the south, centre and east of the State. They prefer low-lying areas where movement is relatively easy, and generally avoid steep slopes. Forests near rivers, with open areas for feeding as well as secluded areas where they can retreat during the day, are generally preferred.

The range of wild elephants in Sabah and Kalimantan seems to have expanded very little in the past 100 years despite access to suitable habitat elsewhere on Borneo. Borneo's soil tends to be young, leached and infertile, and there is speculation that the distribution of wild elephants on the island may be limited by the occurrence of natural mineral resources.

In the early 1980's Davies and Payne suggested that Sabah's wild elephant population numbered between 500 – 2,000 animals. In 2002, Ambu *et al.* provided estimates in the Asian Elephant Action Plan Sabah mostly based on habitat availability: between 1,127 and 1,623 individuals distributed in five major elephant ranges and a couple of isolated populations. Recently, Alfred *et al.* (2010) carried out line transect surveys in all the major elephant ranges and estimated the total number of elephants in Sabah to be around 2,040 individuals with a confidence interval of 1,184 to 3,652, these numbers being currently the most accurate and reliable. The number of individuals in Kalimantan is estimated to be less than 20, with approximately 0.1 individual/km<sup>2</sup> (Alfred *et al.* 2009).

### **1.4 Legal status and legislation**

In Sabah, the elephant is currently protected under Part 1 of Schedule 2; Section 25(2)(a) of the Wildlife Conservation Enactment (WCE) 1997. Protected animals under Part 1 of Schedule 2 can be hunted with a license issued by the Director of the Sabah Wildlife Department (Section 26(1) WCE 1997). For those killing elephants illegally and found guilty of an offence under Section 25(3)(b) WCE 1997, the penalty is a fine of RM50,000 or imprisonment for five years, or both.

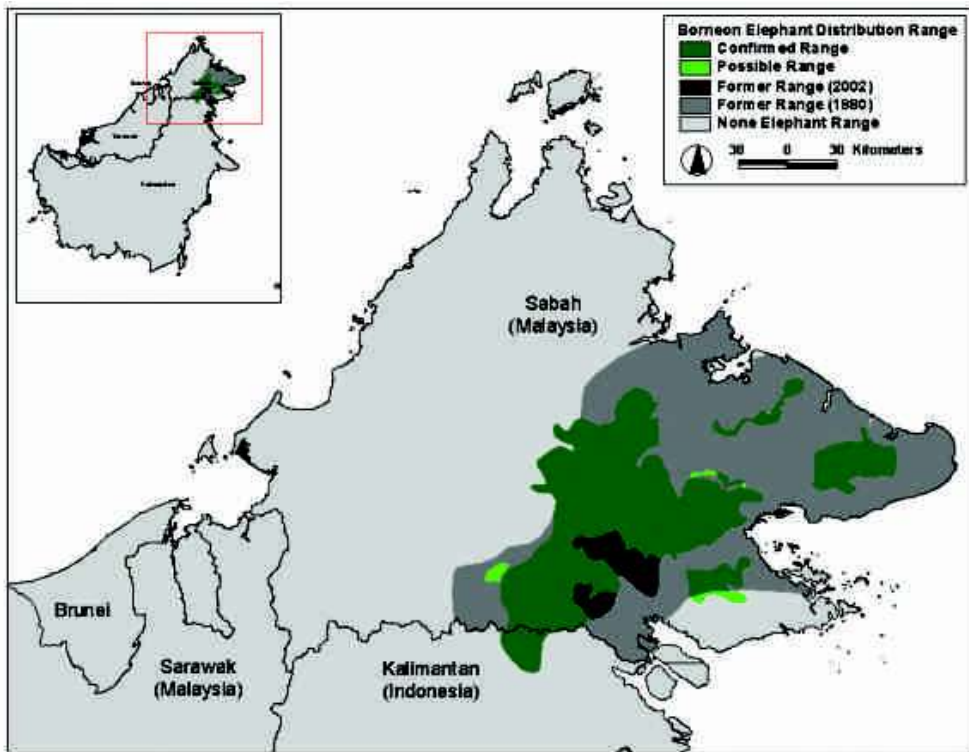
## 1.5 Current major threats

### 1.5.1 Habitat loss and fragmentation

Elephants require large feeding grounds and enough space for social groups to migrate between them. Therefore, in Sabah, the primary threat to the Bornean elephant is the loss and degradation of continuous forests<sup>1</sup>. Over the last 40 years, Sabah has lost about 40% of its forest currently covered by plantations and human settlements. In the 1980-90s, large tracts of these forests were divided into 'Forest Management Units' (FMUs) of around 1,000 km<sup>2</sup> each, which were leased for up to 100 years, to be managed for sustainable wood production. However, years of unsustainable logging before the 1990s had taken their toll, making many of these big concessions commercially unviable in the short to medium term. Therefore, some of the FMU concessionaires have been converting part of their holdings into wood or oil palm plantations. The conversion of forests to plantations remains the biggest threat to Bornean elephants, because no plantation can provide the types and amounts of foods necessary to sustain breeding populations of these elephants.



Aerial view of the Kinabatangan river showing a palm oil plantation set up on the riparian river increasing habitat fragmentation and perturbing the movements of the elephants along the river. Photo: HUTAN/ Marc Ancrenaz



Map 1: Current distribution of the elephant in Borneo (Alfred *et al.* 2010).

Apart from simple conversion of natural forests to plantations, other threats include fragmentation of habitats (conversion to commercial plantations isolates elephant groups from each other in pockets of habitat), and the increase of human presence close to these forest blocks when the oil palm plantations come into operation. This rapid increase in human population causes greater small-scale encroachments, increased hunting in the form of snaring for deer and other games, and increased human-elephant conflict because of elephant displacement.

We follow the definition of the Malaysian Forest Council when we use the term “forest”: it includes “natural” forests as well as industrial tree plantations. Oil palm plantations and other crops are excluded from this definition. These forests are therefore under different land tenures. In the Sabah context, “conversion of natural forests” refers to deliberate removal of natural forest and replacement with commercial crops (with oil palm accounting for 1.6 million ha of land), industrial tree plantations (rubber, acacia), and other types of land uses (roads, human settlements, cattle farms, fish breeding, etc).



Elephant Encroachment in the oil palm plantation (previously the traditional movement path for the elephant)  
Photo: Raymond Alfred



Human & Elephant Conflict -  
Oil Palm tree damaged by Elephants  
Photo: Raymond Alfred

### 1.5.2 Low genetic diversity

A recent genetic study found extremely low genetic diversity in the Bornean elephant population and significant genetic differentiation between currently demographically isolated populations (Goossens *et al.* in prep). These results suggest the desirability of re-establishing gene flow between some populations if an increase of inbreeding and a loss of fitness are to be avoided.

### 1.5.3 Poaching, illegal killing, snare trapping and illegal trade

The Bornean elephant falls under Part 1 of Schedule 2 as Protected Animals under the Wildlife Conservation Enactment 1997. This means that legally, an elephant can still be hunted with a hunting license; however Sabah has adopted the precautionary principle and does not allow hunting until a non-detrimental finding study has been conducted (of which this has not been done). Although poaching was not a serious problem to elephants in the past (see Tuuga 1992), recent reduction of population size in Ulu Kalumpang area might indicate the contrary. Occasional incidents of illegal killing (shooting, poisoning) do occur but these are usually related to the intrusion of elephants into oil palm plantations where they can cause extensive damage. Moreover, snare traps set in the border forests to catch wild mammals for meat pose a risk to elephants, especially in the forest patches bordering oil palm plantations, such as in the Kinabatangan floodplain. It is estimated that 20% of resident elephants have sustained gruesome injuries from snares set illegally in the forest by oil palm workers

who are attempting to supplement their income by selling boar and deer meat to restaurants or for personal consumption. Public awareness, and most importantly, awareness campaigns in oil palm estates are needed to stop such illegal activities.

There is not much data on illegal trade of elephants in Sabah. However, on April 30, 2009, a pair of elephant tusks was seized in Nunukan (Indonesia) from a Malaysian citizen entering from Tawau.

#### **1.5.4 Poor public awareness about the conservation needs for the species**

Lack of knowledge and appreciation is an indirect threat to Bornean elephant's long-term conservation. Therefore, the Sabah State Government and its relevant departments as well as local and international NGOs and scientists, need to tackle public ignorance, increase their awareness and change their attitude towards conservation of the environment



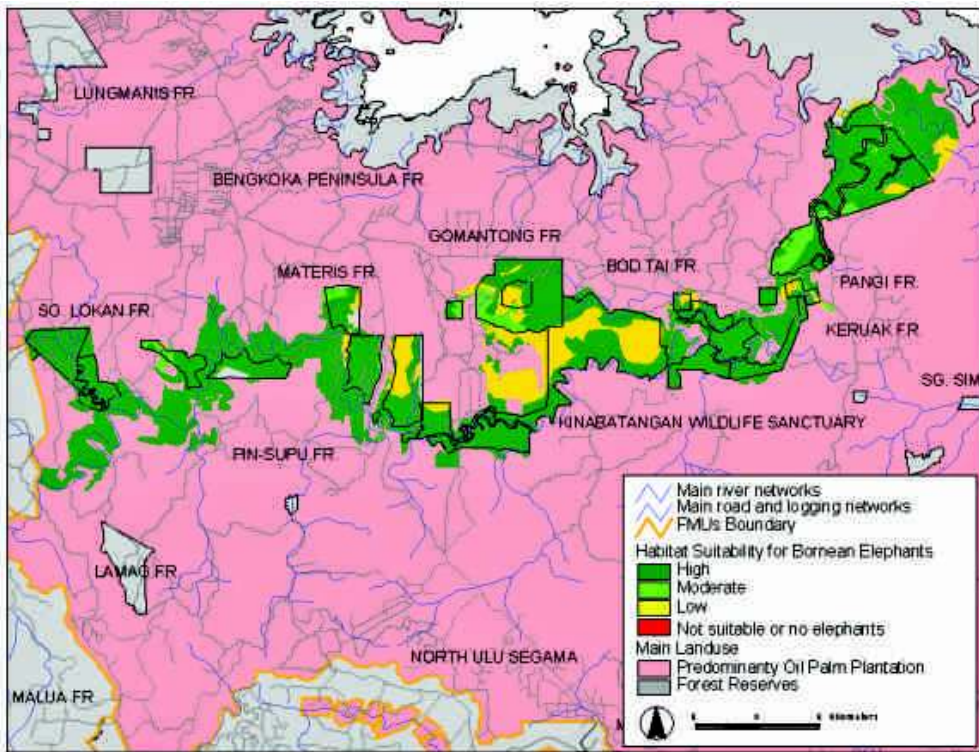
## 2 CURRENT DISTRIBUTION IN SABAH AND SITE DESCRIPTION

### 2.1 Lower Kinabatangan Range (approximately 400 km<sup>2</sup>)

This range consists of highly degraded forests remaining in the Kinabatangan river floodplain, with freshwater swamp forests, secondary dryland forest, limestone outcrops and oxbow lakes. Most of the original forest in this region has been converted to oil palm plantations, reducing the habitat available for the elephants and disturbing their migration routes considerably, therefore increasing human-elephant conflicts. According to recent estimates (Alfred *et al.* 2010), about 298 (CI 95% 152-581) elephants are currently found in the area, showing a two-fold increase in 10 years (between 95 and 115 individuals in the late nineties). The Lower Kinabatangan Range is isolated from the North Kinabatangan Range and from the extensive forest blocks of the Central Sabah Range by plantations and by a public road (highway Sandakan-Lahad Datu). It is very unlikely that the Lower Kinabatangan Range and Tabin Range are still linked. Extensive research (habitat use, movements, social behaviour and feeding ecology) and conservation activities (Elephant Conservation Unit, public awareness) are currently being carried out by the Sabah Wildlife Department and its partners.

### 2.2 North Kinabatangan Range (approximately 1,400 km<sup>2</sup>)

This range consists of parts of three commercial forest reserves (Deramakot, Tangkulap and Segaliud-Lokan) with an estimated population size of 258 individuals (CI 95% 131-511, Alfred *et al.* 2010). High elephant activity is concentrated in the southern and eastern parts of Deramakot Forest Reserve, southern Segaliud-Lokan Forest Reserve and central and eastern parts of Tangkulap Forest Reserve. According to WWF-Malaysia, groups of elephants periodically cross the 70m wide Kinabatangan River, confirming potential migration between the North Kinabatangan Range and the Central Sabah Range. However, the Northern Kinabatangan Range is now disconnected from the Lower Kinabatangan Range by plantations,

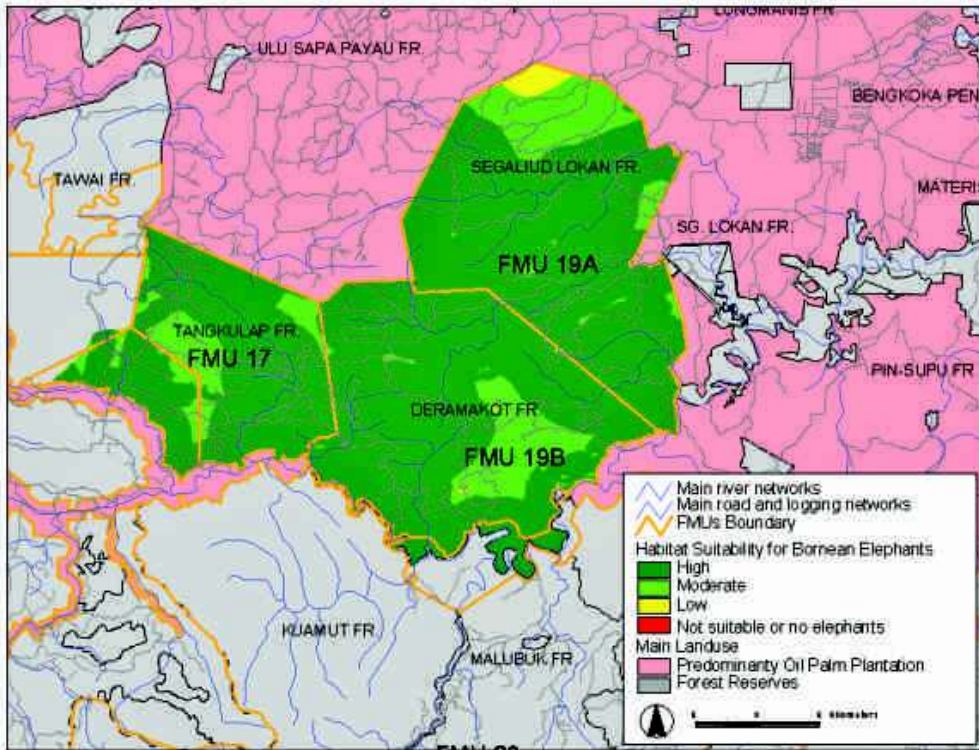


Map 2: Relative distribution density of the Bornean elephants in Lower Kinabatangan range based on habitat suitability (Alfred *et al.* 2010).

human settlement and the main highway linking Sandakan and Lahad Datu towns. Deramakot Forest Reserve (55,000 ha) is managed by the Sabah Forestry Department, and is the first timber production forest in Malaysia certified under Forest Stewardship Council's principles and criteria as sustainably managed.

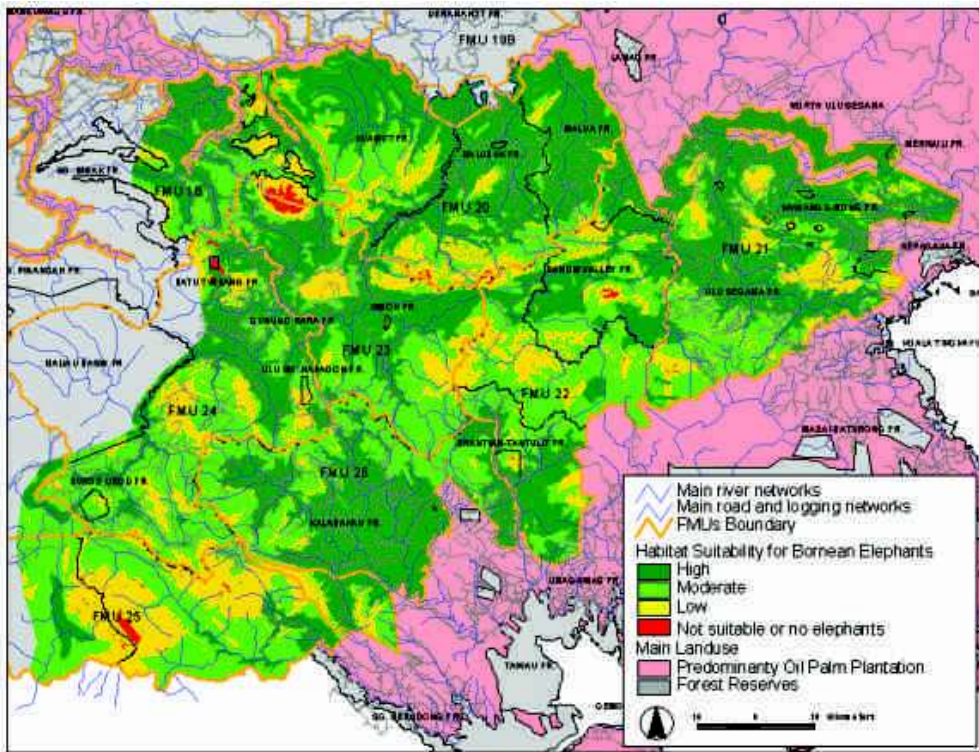
### 2.3 Central Sabah Range (approximately 7,900 km<sup>2</sup>)

This range consists of Ulu Segama, Malua, Kuamut, Gunung Rara, Kalabakan and Sapulut Forest Reserves and Danum Valley Conservation Area. These commercial forest reserves are still linked to each other and represent the largest continuous forest habitat for elephants in the State. They also harbour the highest number of elephants, with an estimated population size of 1,132 individuals (CI 95% 748-1,713, Alfred *et al.* 2010). Recognising the importance of Ulu Segama and Malua FRs for biodiversity,



Map 3: Relative distribution density of the Bornean elephants in North Kinabatangan range based on habitat suitability (Alfred *et al.* 2010).

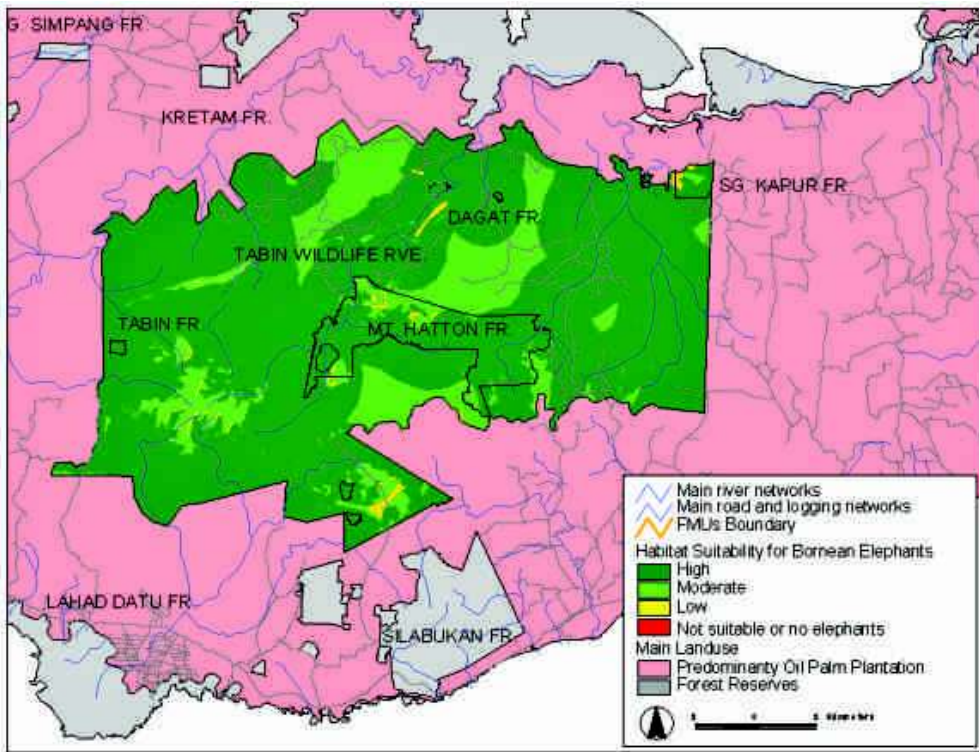
the State government decided to impose a logging ban in 2008 to allow for the habitat to regenerate. A Biodiversity Credit scheme is currently developed in Malua FR. At the same time, parts of the Kalabakan and Gunung Rara Forest Reserves have recently been cleared and replaced by oil palm plantations, hampering migration routes between Sapulut FR and the rest of the Central Sabah Range. It is important to note that some elephants move along the Sibuda and Agison river valleys, between Sabah and north-east Kalimantan, which will necessitate trans-boundary management measures.



Map 4: Relative distribution density of the Bornean elephants in central forests of Sabah based on habitat suitability (Alfred *et al.* 2010).

## 2.4 Tabin Range (approximately 1,200 km<sup>2</sup>)

This range consists of parts of Tabin Wildlife Reserve, which is covered with lowland and hill dipterocarp forests, and with swamp forests in the eastern parts of the Reserve. Except for a tiny corridor of degraded forests stretching along the Segama River that links Tabin Wildlife Reserve with Kuala Segama FR and Kulamba FR, the Tabin WR is entirely surrounded by oil palm plantations. This situation results in conflicts with agriculture at the edges of the reserve. The population size was recently estimated at 342 individuals (CI 95% 152-774) (Alfred *et al.* 2010). In the long-term, the isolation of this population will result in a lower population fitness and genetic diversity, making this population more vulnerable to natural or man-made catastrophes. However, it is very likely that some bulls can still migrate through plantations and disperse into Kulamba FR and Lower Kinabatangan Range, therefore maintaining gene flow between the two ranges. Actions should consider the improvement of the corridor between

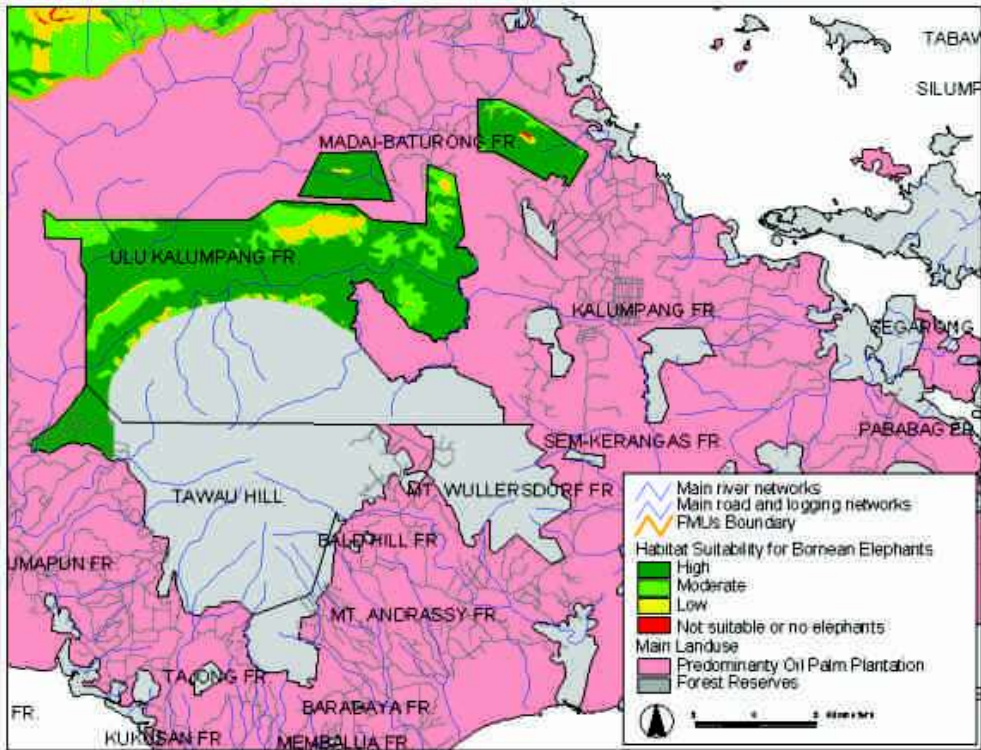


Map 5: Relative distribution density of the Bornean elephants in Tabin Wildlife Reserve based on habitat suitability (Alfred *et al.* 2010).

TWR and Kulamba FR. There is a permanent government guard station of 13 staff run by the Sabah Wildlife Department on the western border of Tabin. Sabah Forestry Department has three guard stations, on the north-east, south-west and south-east edges of Tabin, primarily to guard against illegal logging.

## 2.5 Ulu Kalumpang Range (approximately 510 km<sup>2</sup>)

This range consists of the Ulu Kalumpang Forest Reserve and the northern part of Tawau Hills Park (although elephants have not been recently observed in the latter), where an estimated population size of 10 individuals (CI 95% 1-73, Alfred *et al.* 2010) is found. This range was formerly contiguous with the Kalabakan area, but has been cut off by the development of industrial tree plantations, oil palm and cocoa over the past 30 years.



Map 6: Relative distribution density of the Bornean elephants in Ulu Kalumpang FR based on habitat suitability (Alfred *et al.* 2010).

Table 1: Summary of population size and density estimates in the five managed elephant ranges in Sabah (from Alfred *et al.* 2010)

Range	Population size (No of ind & CI 95%)	Density (ind/km <sup>2</sup> ) (standard error)
Lower Kinabatangan	298 (152-581)	2.15 (0.84)
North Kinabatangan	258 (131-511)	0.56 (0.22)
Central Sabah	1,132 (748-1,713)	1.18 (0.34)
Tabin	342 (152-774)	0.60 (0.28)
Ulu Kalumpang	10 (1-73)	0.12 (0.11)
<b>Total</b>	<b>2,040 (1,184-3,652)</b>	

### **3 NON-SITE SPECIFIC PRIORITY ACTIONS**

**Action 1:** Upgrade the status of the Bornean elephant to Part 1 of Schedule 1 of Totally Protected Animals, WCE 1997 Sabah.

**Action 2:** Every management plan designed for any natural forest or plantation with elephants should be in line with the recommendations developed in this State Action Plan.

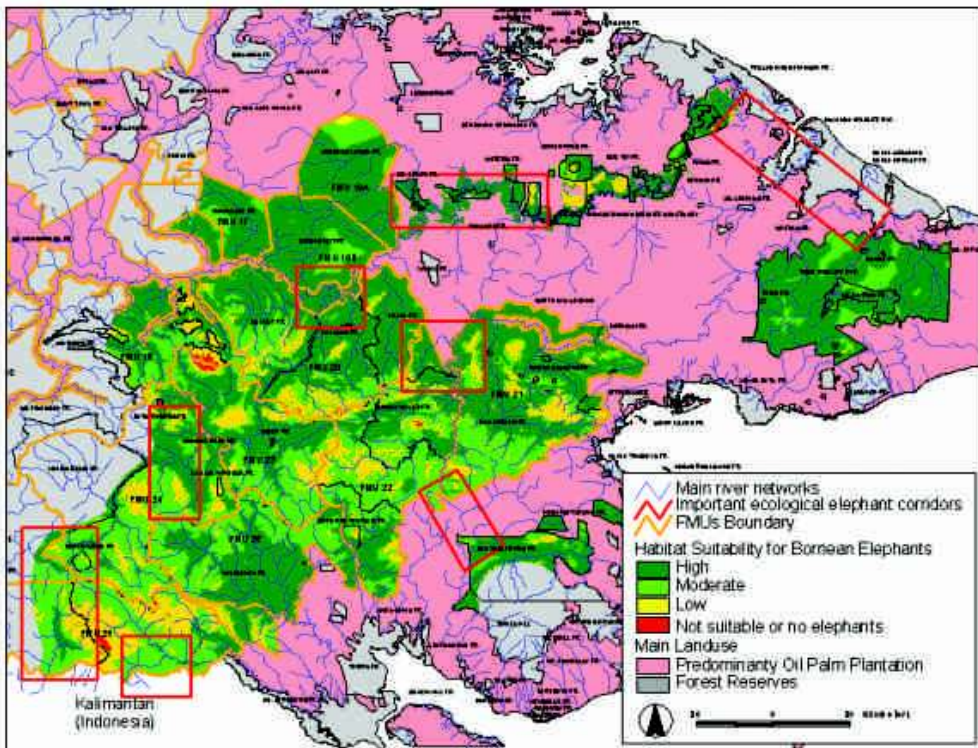
**Action 3:** Areas with reasonable viable populations (at least 50 breeding elephants, translating into a total population of 125-150 elephants) are declared as “Managed Elephant Ranges” (MER): Lower Kinabatangan Range, North Kinabatangan Range, Tabin Range and Central Sabah Range. Increase the value of the forest (through forest restoration and REDD program) in the different MERs.

**Action 4:** Investigate all necessary measures to maintain or reestablish connectivity within and between the key MERs, and initiate specific protection for critical corridor habitats.

**Action 5:** Creation of the “Bornean Elephant Conservation Alliance” (BECA) as a venue encouraging collaboration and communication between all partners involved in elephant management in the State.

This SAP needs to address the gaps existing between all initiatives that are currently being developed in Sabah at the macro-level (Heart of Borneo, Sabah Development Corridor Project, RAMSAR, UNESCO Man and Biosphere, Kinabatangan Corridor of Life, etc) and at the localized level (FMPs, EIAs, PDPs, etc). This goal will be achieved with the official creation of BECA. BECA will be mandated by the State Government, established under the jurisdiction of the Ministry of Tourism, Culture and Environment, and led by the Director of the Sabah Wildlife Department. All partners identified as having a key role for elephant conservation in Sabah will become part of BECA. This Alliance will be officially responsible for:

- Developing a specific work plan to implement the recommendations made in this SAP. This work plan will present a detailed timeframe as



Map 7: Important ecological corridors between the key MERs (Alfred *et al.* 2010).

well as the necessary financial and human resources required to achieve the objectives of this SAP. This work plan will be presented to the State Government and other stakeholders for further action.

- Developing a comprehensive plan to identify where critical lands need to be secured for conservation.
- Regularly reporting to the State Government on the progress of the SAP's implementation.
- Reviewing the SAP every five years.
- Reviewing all official documents (FMPs, EIAs, etc) pertaining to the management of areas occupied by wild elephant populations.
- Pooling together expertise and information resources.
- Elaborating management strategies before submitting them to relevant authorities.
- Under BECA, the establishment of a research network to enable coordinated research activities, joint-funding proposals and enhance the local research infrastructure (physical and human) in Sabah.
- Under BECA, the establishment of a Sabah Elephant Conservation Unit, that will address field-related issues such as HEC mitigation, awareness, surveys, capacity-building of wildlife staff in monitoring methods, etc.



## **Action 6: Agricultural practice and development**

- 1) Prior to any conversion of natural forest to agriculture, the following requirements are to be fulfilled:
  - a) to inform the relevant departments (SWD, DID and EPD) on the proposed scheme;
  - b) to submit in advance special Environmental Impact Assessment addressing elephant issues; and
  - c) to implement recommendations proposed by relevant agencies. The rationale is to decrease human-elephant conflicts and to respect the elephant migration patterns.
  
- 2) In established agricultural lands, the following actions have to be carried out:
  - a) to restore former elephant migration routes which have been constricted by land-use changes, through land purchasing, leasing from industry and communities, and replanting; and
  - b) to develop peaceful human-elephant conflict mitigation techniques. The rationale is to re-establish connectivity between isolated populations.
  
- 3) To promote best management practices and responsible production of palm oil and oil palm products.

## **Action 7: Biomonitoring and scientific research**

- 1) Using biological and population data collected during the last five years and data that will be collected in the near future, to carry out, before 2013, a Population Habitat and Viability Analysis (PHVA) for the whole Sabah elephant population in order to estimate its extinction risks.
  
- 2) To carry out regular monitoring and surveys in all four managed elephant ranges and build up a comprehensive database on elephant population trends in Sabah.
  
- 3) Maintain permanent elephant research within the four MERs.
  
- 4) Design and implement a monitoring system for the corridors.



For the last three years, SWD, HUTAN and DGFC have monitored the movements of the Kinabatangan elephant population by setting up satellite collars on several individuals. The elephants are also tracked daily using VHF technology. The data will help understand how the elephant herd is using the landscape along the Kinabatangan river and will provide valuable information on their social behaviour. Photos: SWD-DGFC/Rudi Delvaux.

### **Action 8: Public awareness and education**

- 1) Increase and promote communication and public awareness, and publicise the conservation needs of the elephant in local, national and international media. Conservationists and scientists need to communicate their actions and findings to the public using the media. Awareness campaigns targeted toward the general public, with a focus on schools and rural areas, are also crucial throughout the State, with an emphasis in the east coast.
- 2) Promoting zero poaching/killing through strict law enforcement (promoting the Honorary Wildlife Warden Scheme and training more wardens) and synchronised awareness programs.
- 3) Engage in awareness campaigns in oil palm estates surrounding the Managed Elephant Ranges to mitigate conflicts, and to address illegal activities such as logging and poaching within and around the MERs.
- 4) Develop guidelines for and promote responsible wildlife watching tourism and responsible behaviour for tour guides and tourists through participative seminars in lodges in elephant areas (i.e. Kinabatangan). Official guidelines must be provided by SWD via printed materials, and a system of implementation for policies has to be relevant for the tour guides in Sabah.

**Action 9: Identify possible release sites for elephant translocation.**

**Action 10: Ensure that culling will only be practiced by the Sabah Wildlife Department when human life is threatened, in accordance to the 1997 Wildlife Enactment.**

**Action 11: Develop sustainable financing mechanisms for elephant conservation programs within the Sabah.**



Translocation of an elephant from an oil palm plantation carried out by the Sabah Wildlife Department displaced bull elephant Wildlife Rescue Unit. Photo: SWD/ Sen Nathan

## **4 SITE-SPECIFIC PRIORITY ACTIONS**

### **4.1 Major Elephant Ranges (MERs)**

#### **4.1.1 Lower Kinabatangan Range**

**Action 1:** Prevent any process that would further fragment the habitat of the elephant population (highways, major bridges, etc).

**Action 2:** Institute a moratorium on new oil palm development within 500m on both sides of the Kinabatangan river.

**Action 3:** Include all remaining forests on state land adjacent to LKWS, into the LKWS.

**Action 4:** Re-establish a corridor of forest along Kinabatangan and its major tributaries.

**Action 5:** Investigate the feasibility of an elephant passage below Batu Putih bridge. In case connectivity is re-established, monitor thoroughly the population movements between Batu Putih and Lokan areas.

**Action 6:** Develop and promote responsible elephant tourism guidelines and establish community-based elephant ecotourism, with appropriate training for tour guides and boatmen.

#### **4.1.2 North Kinabatangan Range**

**Action 1:** Make every effort to maintain and reestablish migration and river crossing by elephant groups between North Kinabatangan Range and Central Sabah Range.

### **4.1.3 Central Sabah Range**

**Action 1:** Develop and promote trans-boundary collaboration with Indonesia for the management of elephants crossing the border, possibly through the Heart of Borneo initiative.

**Action 2:** Ensure that connectivity within CSR is not jeopardised.

### **4.1.4 Tabin Range**

**Action 1:** Re-establish connection between Tabin, Kulamba and Kinabatangan.

## **4.2 Other Ranges**

### **4.2.1 Ulu Kalumpang Range**

**Action 1:** Re-assess the status of the elephant population (population size and distribution, habitat use, threats) and investigate the recent reduction of population size.

## 5 EX SITU CONSERVATION EFFORTS

Ex situ conservation of the Bornean elephant would play an important role in the management of small fragmented groupings of elephants outside the managed elephant ranges, when translocation is not an option:

**Action 1:** Maintain the Lok Kawi Wildlife Park captive population (presently 14 individuals, *carrying capacity around 12 animals only*) for conservation education and public awareness.

**Action 2:** Unless as part of a government-to-government initiative, the exportation of Bornean elephants out of Sabah will not be considered as an option in the ex-situ conservation of this species.

**Action 3:** Priority will be given to the establishment of a Bornean Elephant Sanctuary (BES) under the guidelines of BECA. This sanctuary will act under the premise of rescuing orphaned, displaced and injured wild elephants with the ultimate goal of translocating suitable animals back to their natural habitat.

**Action 4:** To set up a research focal point at Lok Kawi Wildlife Park.



Many elephants, especially in the Kinabatangan area, are caught in snares set up for wild boars and deers. The Sabah Wildlife Department and its Wildlife Rescue Unit carry out many interventions in the wild, caring for the welfare of these injured elephants. Photo: SWD/ Jibius Dausip

## **6 ELEPHANT ACTION PLAN IMPLEMENTATION, MONITORING AND EVALUATION**

### **6.1 EAP implementation**

In order for this Plan to achieve its ultimate objective, that is, securing the future of the Bornean elephant in Sabah, all recommendations should be formulated by the Sabah Wildlife Department (SWD) as a position paper to be endorsed by the Sabah State Cabinet.

To ensure a better synergy, this Plan needs to consider and incorporate, whenever possible the recommendations of several initiatives that are currently prepared or implemented in the State:

- The State Cabinet Paper about “Reconnecting fragmented habitats along major rivers in Sabah.
- Heart of Borneo initiative: emphasis is given to habitat connectivity.
- Kinabatangan Corridor of Life: possible vehicle to establish a “management committee” for the area.

While the implementation of the EAP remains the responsibility of SWD, there should be clear communication and consideration of elephant priorities within the wider stakeholders, and feedback from the other relevant government departments (especially Sabah Forestry Department, Sabah Foundation and Sabah Parks) on the implementation of the plan. This is essential to ensure the full potential advice from the relevant government department is used to support and add value to the implementation of the EAP, whether this be through the provision of advice, fundraising or active involvement of other stakeholders (for example, in policy work or by influencing land-use planning.)

The main, most immediate priorities to ensure effective implementation of this plan are:

- (i) to secure dedicated capacity within the implementing offices of Sabah Wildlife Department (e.g. Kinabatangan District, Lahad Datu District, Tawau District, Kalabakan District and etc); and
- (ii) to establish effective and operational lines of communication between all district departments involved.

BECA will facilitate co-operation and co-ordination throughout the government departments by:

- (i) ensuring effective communication between relevant government departments, including the appointment of an officer in-charge;
- (ii) ensuring that the adequate resources (manpower, skills and knowledge) in SWD are available to support the implementation of this EAP; and
- (iii) ensuring that there is harmonisation of conservation, communication and fundraising objectives, particularly between implementing and relevant NGOs.

## **6.2 EAP monitoring and evaluation**

Each part of the conservation strategy program will have a monitoring and evaluation plan, based on targets, milestones and indicators against which progress can be assessed. Technical and financial (if necessary) progress reports will be delivered regularly at least annually.

It is also required that on a yearly basis, an overview and analysis of progress, based on the reports received from the relevant NGOs, will be produced and circulated to the relevant government departments. Evaluations during the EAP's implementation period and review workshops will assess progress, highlight major issues and constraints, and provide recommendations for improvements. The plan will be fully reviewed and rewritten every five years. Monitoring and evaluation of activities to be undertaken under this Plan will be conducted by BECA.



### **6.3 Five-year plan**

The first necessary step for implementing this EAP is for the State Government to endorse and support the creation of BECA as soon as possible.

Proposed work plan for BECA:

January-June 2012	<p>Creation of BECA and official invitation sent to key partners to join BECA.</p> <p>Preparation of a work plan (including milestones, outputs, partners in charge for its implementation) and budget for implementing the EAP.</p> <p>Presentation of the work plan to the State Cabinet.</p> <p>Fundraising for the setting up of the Sabah Elephant Conservation Unit (SECU).</p>
June 2012	<p>Creation of SECU</p>
July 2012-June 2016	<p>Supervision of the EAP implementation through regular meetings with all partners.</p> <p>Yearly progress reports on the EAP implementation will be circulated at the highest government level.</p>

## LIST OF ABBREVIATIONS

BECA	Bornean Elephant Conservation Alliance
BES	Bornean Elephant Sanctuary
BORA	Borneo Rhino Alliance
CI	Confidence Interval
CSR	Central Sabah Range
DID	Department of Irrigation and Drainage
EAP	Elephant Action Plan
EIA	Environmental Impact Assessment
EPD	Environment Protection Department
FMP	Forest Management Plan
FMU	Forest Management Unit
FR	Forest Reserve
HEC	Human Elephant Conflict
LKWS	Lower Kinabatangan Wildlife Sanctuary
MER	Managed Elephant Range
PDP	Plantation Development Programme
PHVA	Population Habitat Viability Analysis
REDD	Reducing Emissions from Deforestation and Forest Degradation
SAP	State Action Plan
SECU	Sabah Elephant Conservation Unit
SFD	Sabah Forestry Department
SWD	Sabah Wildlife Department
TWR	Tabin Wildlife Reserve
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VHF	Very High Frequency
WCE	Wildlife Conservation Enactment

## REFERENCES

- Alfred R, Ahmad AH, Payne J, Williams C, Ambu L. 2010. Density and population estimation of the Bornean elephants (*Elephas maximus borneensis*) in Sabah. *OnLine Journal of Biological Sciences* 10(2): 92-102.
- Alfred R, Kusama D. A. and Effendy W. 2009. Elephant conservation work in Kalimantan, WWF-Malaysia Report.
- Ambu LN, Andau PM, Nathan S, Tuuga A, Jensen SM, Cox R, Alfred R, Payne J. 2002. Asian Elephant Action Plan Sabah (Malaysia). Sabah Wildlife Department, Sabah, Malaysia.
- Cranbrook E, Payne J, Charles MU. 2008. Origin of the elephants *Elephas maximus* L. of Borneo. *Sarawak Museum Journal*.
- Fernando P, Vidya TN, Payne J, Stuewe M, Davison G, et al. 2003. DNA analysis indicates that Asian elephants are native to Borneo and are therefore a high priority for conservation. *Public Library of Science Biology* 3: 382-388.
- Jalil MF. 2007. Comparative phylogeography of three primate species in the Lower Kinabatangan Wildlife Sanctuary, Sabah, Malaysia. Doctor of Philosophy Thesis, Cardiff University.
- Jalil MF, Cable J, Sinyor J, Lackman-Ancrenaz I, Ancrenaz M, Bruford MW, Goossens B. 2008. Riverine effects on mitochondrial structure of Bornean orang-utans (*Pongo pygmaeus*) at two spatial scales. *Molecular Ecology* 17: 2898-2909.
- Tuuga, A. 1992. Conservation of elephants in Sabah. Paper presented in the Asian Elephant Specialist Group Meeting, 22-22 May 1992 in Bogor, Indonesia. Unpublished.

## Species Action Plan Committee Members

Name : **AZLIN AHMAD**  
Agency : Sabah Wildlife Department  
Email : Azlin.Ahmad@sabah.gov.my

Name : **MARK RAMPANGAJOUW**  
Agency : Sabah Wildlife Department (WRU)  
Email : othmandouglas@yahoo.com

Name : **BENOIT GOOSSENS**  
Agency : Danau Girang Field Centre  
Email : goossensbr@cardiff.ac.uk

Name : **MARYSIA JAMES**  
Agency : Sabah Wildlife Department (WRU)  
Email : maryjames84@live.com

Name : **HARJINDER KLER**  
Agency : HUTAN  
Email : klerh@yahoo.com

Name : **MILENA SALGADO LYNN**  
Agency : Danau Girang Field Centre  
Email : mslynn9@hotmail.com

Name : **JESSICA FRANCIS**  
Agency : WWF-Malaysia  
Email : JRatnam@wwf.org.my

Name : **NURZHAFARINA OTHMAN**  
Agency : Danau Girang Field Centre  
Email : nurzhafarina@gmail.com

Name : **JIBIUS DAUSIP**  
Agency : Sabah Wildlife Department

Name : **RAYMOND ALFRED**  
Agency : Borneo Conservation Trust  
Email : raymond\_alfred@yahoo.com

Name : **JUM RAFIAH ABDUL SHUKOR**  
Agency : Sabah Wildlife Department  
Email : Jumrafiah.AbdShukor@sabah.gov.my

Name : **SENTHILVEL NATHAN**  
Agency : Sabah Wildlife Department  
Email : rhinosbh@gmail.com

Name : **JUNAI DI PAYNE**  
Agency : BORA  
Email : jpyne@pd.jaring.my

Name : **SHARON KOH PEI HUE**  
Agency : WWF-Malaysia  
Email : Skoh@wwf.org.my

Name : **LAURENTIUS N. AMBU**  
Agency : Sabah Wildlife Department  
Email : Laurentius.Ambu@sabah.gov.my

Name : **SUMBIN GADAS**  
Agency : Sabah Wildlife Department  
Email : Sumbin.Gadas@sabah.gov.my

Name : **LEE SHAN KHEE**  
Agency : WWF-Malaysia  
Email : SKLee@wwf.org.my

Name : **SYMPHOROSA SIPANGKUI**  
Agency : Sabah Wildlife Department  
Email : danguard78@yahoo.com

Name : **LIM SEIK NI**  
Agency : Sabah Wildlife Department (WRU)  
Email : seikni@yahoo.com

Name : **XENIA SURINDAY**  
Agency : Sabah Wildlife Department  
Email : Xenia.Surinday@sabah.gov.my

Name : **MARC ANCRENAZ**  
Agency : HUTAN  
Email : marc.ancrenaz@yahoo.com

## Workshop Participants

Name : **ANNA WONG**  
Agency : MALAYSIA NATURE SOCIETY  
Email : annawg888@gmail.com

Name : **ABDUL HAMID BIN KIMAR**  
Agency : IOI GROUP  
Email : abdulhamid\_kimar@yahoo.com

Name : **ABDUL KARIM HJ. DAKOG**  
Agency : SABAH WILDLIFE DEPARTMENT  
Email : AbdKarim.Dakog@sabah.gov.my

Name : **ADLIN ZAINAL (YM Dato' Seri Tengku)**  
Agency : SABAH TOURISM BOARD

Name : **ADRIAN CHIN**  
Agency : BORNEO ECO TOURS

Name : **AUGUSTINE TUUGA**  
Agency : SABAH WILDLIFE DEPARTMENT  
Email : Augustine.Tuuga@sabah.gov.my

Name : **BENEDICT JANI**  
Agency : SABAH WILDLIFE DEPARTMENT  
Email : Benedict.Jani@sabah.gov.my

Name : **CALLEY BEAMISH**  
Agency : WILMAR INTERNATIONAL LTD  
Email : calley@wilmar.com.my

Name : **CEDE PRUDENTE**  
Agency : NORTH BORNEO SAFARI SDN BHD  
Email : cpu@tm.net.my

Name : **CYNTHIA ONG**  
Agency : LAND EMPOWERMENT ANIMALS  
PEOPLE (LEAP)  
Email : Cynthia@leapspiral.org

Name : **CYRIL PINSO**  
Agency : BORNEO CONSERVATION TRUST  
Email : ctpinso@yahoo.com

Name : **DARIUS SARSHAR**  
Agency : NEWFOREST  
Email : dsarshar@newforest.com.au

Name : **DAVID CHIENG**  
Agency : KTS FMU

Name : **FAIZA ISMAIL CELESTIAL**  
Agency : AGRICULTURE DEPARTMENT  
Email : Fariza.IsmailCelestial@sabah.gov.my

Name : **FRANKIE A. PATRICK**  
Agency : IOI GROUP

Name : **FREDERICK KUGAN**  
Agency : SABAH FORESTRY DEPARTMENT  
Email : Frederick.kugan@sabah.gov.my

Name : **GIDION A. MOSITO**

Name : **HAMZAH TANGKI**  
Agency : SABAH FOUNDATION  
Email : HTangki@yahoo.com

Name : **HENRY BERNARD**  
Agency : UNIVERSITI MALAYSIA SABAH  
(Institute of Tropical Biology and  
Conservation)  
Email : hbtiandun@yahoo.com

Name : **HUSSIEN MUIN**  
Agency : SABAH WILDLIFE DEPARTMENT  
Email : Hussien.Muin@sabah.gov.my

Name : **HUSSIEN TUKIMAN**  
Agency : SABAH FORESTRY DEPARTMENT,  
KINABATANGAN  
Email : Hussien.Tukiman@sabah.gov.my

Name : **INDRA SUNJOTO PURWANDITO**  
Agency : SABAH FORESTRY DEPARTMENT  
Email : IndraPurwandito.Sunjoto@sabah.gov.my

Name : **ISABELLE LACKMAN**  
Agency : HUTAN  
Email : panaupanau@yahoo.com

Name : **JAMES ROBINS**  
Agency : UK Appeal

Name : **JOHN ALDIN**  
Agency : NORTH BORNEO SAFARI SDN BHD  
Email : jaldpru@yahoo.com

Name : **JOHN MERVYN BAXTER**  
Agency : SAPULUT DEVELOPMENT SDN BHD  
(FMU 14)

Name : **JOHN TAY**  
Agency : UNIVERSITI MALAYSIA SABAH  
(School of International Tropical Forestry)  
Email : johntay@ums.edu.my

Name : **JOHNNY HARUMAL**  
Agency : WWF-MALAYSIA  
Email : Jharumal@gmail.com

Name : **JOSEPH GASIS**  
Agency : WWF-MALAYSIA  
Email : Jgasis@wwf.org.my

Name : **KENNESH MANOKARAN**  
Agency: HUTAN

Name : **KERTIJAH ABDUL KADIR**  
Agency: WWF-MALAYSIA  
Email : Kkadir@wwf.org.my

Name : **LEE SWEE YIN**  
Agency: SIME DARBY PLANTATION

Name : **LILIAN AGAMA**  
Agency: TOUR GUIDE ASSOCIATION  
Email : lillian@seaquesttours.net

Name : **MARSHAL CHUAT**  
Agency: WWF-MALAYSIA  
Email : Mchuat@wwf.org.my

Name : **MAXENTIUS DANYSIUS**  
Agency: WWF-MALAYSIA  
Email : MDonysius@wwf.org.my

Name : **MICHAEL NG FOO YUEN**  
Agency: MPOC  
Email : michael@mpoc.org.my

Name : **MOHD. SOFIAN ABU BAKAR**  
Agency: SABAH WILDLIFE DEPARTMENT  
Email : MohdSoffian.AbuBakar@sabah.gov.my

Name : **NORAZAM ABDUL HAMEED**  
Agency: SIME DARBY PLANTATION  
Email : norazam.hameed@simedarby

Name : **NORSYAMIMI SAIFULLIZAM**  
Agency: SIME DARBY PLANTATION  
Email : norsyamimi@simedarby.com

Name : **PETER MALIM**  
Agency: SABAH WILDLIFE DEPARTMENT  
Email : Peter.Malim@sabah.gov.my

Name : **PETRUS SAIGOL**  
Agency: SABAH FORESTRY DEPARTMENT  
Email : Petrus.Saigol@sabah.gov.my

Name : **RAHIMATSAH AMAT**  
Agency: WWF-MALAYSIA  
Email : ramat@wwf.org.my

Name : **RASHID SABURI**  
Agency: SABAH WILDLIFE DEPARTMENT  
Email : Rashid.Saburi@sabah.gov.my

Name : **RICHARD KANDUNGAN**  
Agency: SAPULUT DEVELOPMENT SDN BHD  
(FMU 14)

Name : **ROLAND NIUN**  
Agency: SABAH WILDLIFE DEPARTMENT  
Email : Roland.Niun@Sabah.gov.my

Name : **ROSLAN YAACOB**  
Agency: FRIM (Green eclipse)

Name : **ROSLI JUKRANA**  
Agency: KOPEL BHD  
Email : kopel@tm.net.my

Name : **ROSMAN SAKONG**  
Agency: RED APE ENCOUNTERS

Name : **ROSTI SANDAYAN**  
Agency: SABAH FOUNDATION  
Email : rosti@icsb-sabah.com.my

Name : **ROZANNA BASRI**  
Agency: YAYASAN SIME DARBY

Name : **SAILUN HJ ARIS**  
Agency: SABAH WILDLIFE DEPARTMENT  
Email : Sailun.Aris@sabah.gov.my

Name : **SIMON GEH**  
Agency: WILMAR INTERNATIONAL LTD.  
Email : simongeh@welmer.com.my

Name : **SUHAILIE KAHAR**  
Agency: RED APE ENCOUNTERS

Name : **SILVESTER SAIMIN**  
Agency: SABAH WILDLIFE DEPARTMENT  
Email : Silvester.Saimin@sabah.gov.my

Name : **SYLVIA YORATH**  
Agency: LAND EMPOWERMENT ANIMALS  
PEOPLE (LEAP)  
Email : syorath@hotmail.com

Name : **TONY MUNI**  
Agency: SHANGRI-LA'S RASA RIA RESORT

Name : **WAIDI SINUN**  
Agency: SABAH FOUNDATION  
Email : ydsinun@gmail.com

Name : **WENDY HUTTON**  
Agency: SABAH SOCIETY  
Email : wendyh@streamyx.com

Name : **YAP SIEW FAH**  
Agency: JABATAN PENGALIRAN & SALIRAN  
(DID)

Name : **YEW FOONG KHEONG**  
Agency: MPOC  
Email : yew@mpoc.org.my

Species Action Plan Committee Members and Participants



**PARTNERS:**



**M P O C**

**Malaysian Palm Oil Council**



**Kinabatangan Orang-utan  
Conservation Project**



**Borneo Rhino Alliance**



**Danau Girang Field Centre**



**Shangri-La's Rasa Ria Resort**