NECAP 2.0

NATIONAL ELEPHANT CONSERVATION ACTION PLAN (2023-2030)

NECAP 2.0

Department of Wildlife and National Parks (PERHILITAN) Peninsular Malaysia

Ministry of Natural Resources, Environment and Climate Change (NRECC)

NATIONAL ELEPHANT
CONSERVATION ACTION PLAN
(2023-2030)

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BY

Department of Wildlife and National Parks
(PERHILITAN) Peninsular Malaysia
Ministry of Natural Resources, Environment
and Climate Change (NRECC)
2023

First printing 2023

Published in Malaysia by:
Department of Wildlife and National Parks (PERHILITAN)
Peninsular Malaysia
KM 10 Jalan Cheras
56100 Kuala Lumpur, Malaysia
+603 9086 6800
+603 9075 2873
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www.wildlife.gov.my

Printed in Malaysia by:
Zamara Biz
Level 7, Menara Arina Uniti, Jalan Raja Muda Abdul Aziz
50300 Kuala Lumpur
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Citation:
Department of Wildlife and National Parks (PERHILITAN) Peninsular Malaysia. 2023. National Elephant Conservation Action Plan (2023-2030) (NECAP 2.0). Kuala Lumpur, Malaysia.

Cataloguing-in-Publication Data
Perpustakaan Negara Malaysia
A catalogue record for this book is available from the National Library of Malaysia
eISBN 978-967-5557-54-5

The felling and chipping of the old palm trees during replanting phase has attracted a herd of elephants to get food at Ladang Sembrong Kiri, Kluang, Johor. The picture was taken using a drone by PERHILITAN Johor on 28 September 2023

Contents

Foreword

The Asian elephant *(Elephas maximus)* is one of the most important terrestrial wildlife species in Peninsular Malaysia due to its significant ecological role. Globally, elephants are endangered species that require protection as they need large wilderness areas or habitats. Protecting elephants and their habitats will indirectly safeguard other wildlife species that coexist in the same habitat.

Efforts to conserve elephants are currently underway and will be further strengthened through the implementation of the National Elephant Conservation Action Plan (2023-2030) - NECAP 2.0. This plan is in line with the recommendations of The Kathmandu Declaration for Asian Elephant Conservation 2022. The NECAP 2.0 has also been designed with consideration for other national commitments and policies that support the achievement of the Sustainable Development Goals (SDGs). By implementing the strategies and actions outlined in NECAP 2.0, the country can achieve the SDG targets, particularly those related to Goal 15: Life On Land: Protect, restore and promote the sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, halt and reverse land degradation, and prevent biodiversity loss.

NECAP 2.0 requires close coordination between the Federal Government and the participating state governments. This coordination is in line with the Federal Constitution's requirements, which place wildlife conservation on a Joint List that requires the commitment of all parties involved. I am confident that the inclusive approach taken in the development of NECAP 2.0 and other relevant policies will help us achieve our goals.

Love our wildlife.

Nik Nazmi bin Nik Ahmad
Minister
Natural Resources, Environment
and Climate Change (NRECC)

“The preservation of wildlife, such as Asian elephants, is essential in reaching the Sustainable Development Goals (SDGs) outlined in the United Nations 2030 Agenda”

From the Desk of the Secretary General

Various approaches have been carried out by the Ministry of Natural Resources, Environment and Climate Change (NRECC) through the Department of Wildlife and National Parks (PERHILITAN) of Peninsular Malaysia to ensure that the elephant population in Peninsular Malaysia is preserved for future generations. Successes such as the amendment of the Wildlife Conservation Act (Amended) 2022 [*Act A1646*] in December 2021, enforcement operations to combat illegal elephant poaching, programs involving various levels of stakeholders, collaboration with academia and non-governmental organisations (NGOs) especially in elephant research is one of the indicators of the success of the implementation of the National Elephant Conservation Action Plan (NECAP) since it was launched in 2013.

However, given the ongoing pressure for development in the nation and the requirement to create action plans based on Government policies and recent regulations of The International Union for Conservation of Nature (IUCN) guidelines, the development of the National Elephant Conservation Action Plan (2023–2030) (NECAP 2.0) is timely.

The public's lack of awareness and tolerance of the significance of the ecological function of elephants has led to a negative perception of their existence, particularly for the elephant that roam close to human settlements. The situation will become more complicated when the farm operators need to play their part in providing space for these elephants to cross the farm area safely or at least provide an area for these elephants to get food on the edges of the farm.

With the idea of coexistence between humans and elephants, it is necessary to introduce some realistic and practical initiatives to reduce the conflict between humans and elephants. All stakeholders must work together in establishing the corridors that connect the network of elephant habitats. To lessen the elephant population's reliance on the community's crops for food, such initiatives to provide food resources must also be considered. Additionally, public awareness initiatives must be intensified to educate and to reduce the public's negative perception of elephants.

Engagement sessions must be increased to encourage their participation as strategic partners in elephant conservation efforts. The implementation of efforts as outlined in the NECAP 2.0 action plan will positively impact the sustainability of the elephant population in this country for the sake of future generations.

Thank you.

Dr. Ching Thoo a/l Kim
Secretary General
Natural Resources, Environment
and Climate Change (NRECC)

“In order to establish a win-win situation, efforts that are realistic and practicable must be implemented towards peaceful coexistence of humans and elephants”

Preface

The Asian elephant population in Malaysia, like elephants elsewhere, is facing major threats such as habitat loss and fragmentation, human-elephant conflict, and illegal killing. It is crucial that we tackle these challenges as responsible stewards of elephant conservation, and take appropriate actions to address these issues.

The Department of Wildlife and National Parks (PERHILITAN) Peninsular Malaysia has undertaken several initiatives to address the issue of human-elephant conflict in the country. However, it is important to note that while the Department is responsible for wildlife conservation in Malaysia, it cannot solely be relied upon to handle human-elephant conflict situations. It is crucial to identify the root causes of the conflict and involve all parties concerned in implementing effective mitigation strategies.

The National Elephant Conservation Action Plan (NECAP 2.0) aims to promote coexistence between humans and elephants. The plan acknowledges the presence of elephants in human landscapes and strives for a win-win situation. It is in line with the IUCN SSC Guideline on Human-Wildlife Conflict and Coexistence.

It is worth noting that NECAP 2.0 has taken into account relevant government policies and recommendations from the IUCN SSC Asian Elephant Specialist Group (AsESG) to ensure that actions can be taken comprehensively and complement each other. The plan is inclusive and practical in addressing the ongoing challenge of habitat loss and requires the cooperation of all parties to be successful.

Wildlife for our future generations.

Dato' Abdul Kadir bin Abu Hashim
Director General
Department of Wildlife and National Parks
(PERHILITAN) Peninsular Malaysia

“Asian elephants are both a global and national treasure for which stakeholders and nations collaborate in their conservation efforts”

Executive Summary

The Department of Wildlife and National Parks (PERHILITAN) Peninsular Malaysia, with the support of local researchers, Non-Governmental Organisations and the IUCN SSC Asian Elephant Specialist Group (AsESG), has prepared The National Elephant Conservation Action Plan (2023-2030), or NECAP 2.0. The plan includes strategic planning and implementation efforts to conserve Asian elephants. It assess the status of wild and captive populations and the management of threats and challenges faced by Asian elephants in Peninsular Malaysia. The Plan is in line with the current policies of the Government of Malaysia and involves all responsible parties. The vision of the Plan is to see "wild elephants thrive across their current and recoverable range in Peninsular Malaysia while coexisting with people in an ecologically functional landscape". The goal is to have "healthy elephant populations sustainably managed and conserved with shared responsibility at all levels of community." To achieve this, the Plan includes five objectives, 11 strategies, and 30 actions which will form the basis of the execution at the state level:

Objective 1 ***: Preservation and conservation of elephant corridors and habitats***
Strategy 1.1 *: Connection of the corridor linkages and elephant habitat identified and restored*
Strategy 1.2 *: Monitoring and promoting the implementation of low-impact resource extraction activities*

Objective 2 ***: Reducing the impact of human-elephant conflict and increasing the acceptance of coexistence***
Strategy 2.1 *: Reducing the impact of elephant conflict to an acceptable level that encourages the concept of coexistence*
Strategy 2.2 *: Increasing tolerance of elephant presence to a level that supports elephant habitat preservation*

Objective 3 ***: Strengthening legislation and increasing the effectiveness of enforcement***
Strategy 3.1 *: Effective law enforcement conducted in landscapes of Managed Elephant Ranges (MERs)*
Strategy 3.2 *: Strengthening of legislation and improving the capacity of enforcement members*
Strategy 3.3 *: Increasing awareness and engagement of local communities in supporting enforcement efforts*

Objective 4 ***: Increased knowledge base on elephant behaviour, ecology, and their habitats***
Strategy 4.1 *: Increasing knowledge of elephant population dynamics and behavioural response to anthropogenic disturbances*
Strategy 4.2 *: Effective sharing of research results and monitoring of activities*

Objective 5 ***: Governance of the management of elephants in captivity***
Strategy 5.1 *: Improving the governance of the management of elephants in captivity*
Strategy 5.2 *: Improving mahout skills and husbandry systems*

The implementation stage of the action plan is set until the year 2030 to be aligned with the Malaysia Plan, and implementation monitoring is carried out at three levels, namely:
i. State Elephant Conservation Action Committee (SECAC)
ii. National Technical Committee on Elephant Conservation (NTCEC)
iii. National Committee on Elephant Conservation (NCEC)

The assessment and revision of NECAP 2.0 will be carried out every four years to identify the weaknesses in implementation and the opportunities for improvement, as well as to carry out strategies for future planning.

Acknowledgement

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Elephant Management Strengthening Program and Revision of the National Elephant Conservation Action Plan (NECAP) was held in Kuala Juram, Pahang National Park, Pahang on 18 – 20 September 2020

National Elephant Conservation Action Plan (2023-2030) (NECAP 2.0) workshop in Port Dickson, Negeri Sembilan on 27 - 29 September 2022

NECAP 2.0 final draft was presented during the IUCN SSC 11th Asian Elephant Specialist Group (AsESG) Members Meeting in New Delhi, India, on 15th March 2023 to report the preparation status of NECAP 2.0 and to get views of the Asian Elephant experts present

List of Figures

List of Figures

List of Figures

List of Figures

List of Figures

List of Figures

List of Tables

The bonding between mahouts and trained elephants are vital to ensure that the elephant rescue operation runs smoothly

Suitable habitats like Kenyir Lake at Terengganu National Park can be used as ecotourism attractions such as elephant observation activities. Photo taken by Salman Saaban on 21 March, 2023

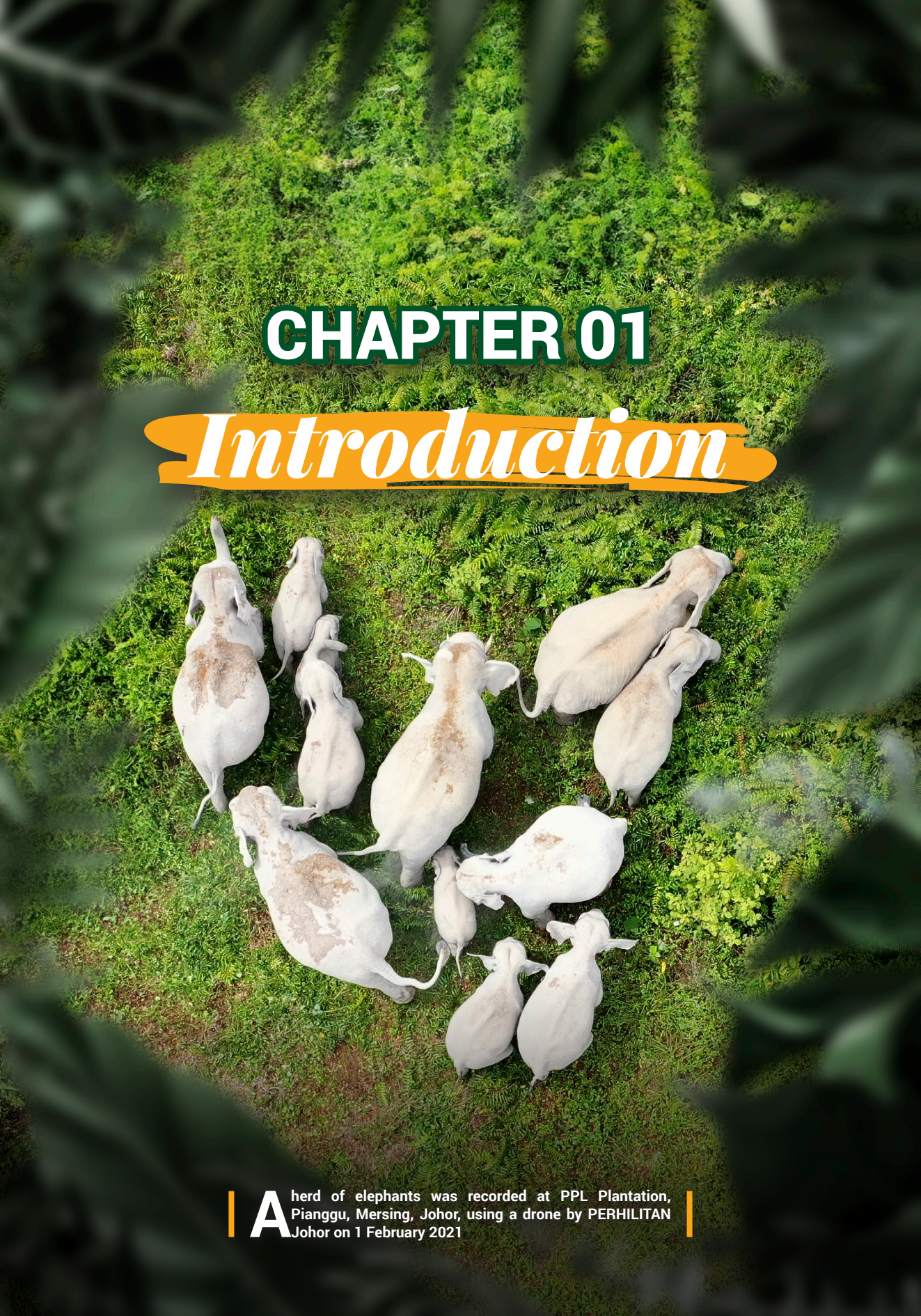
List of Abbreviations and Acronyms

AGC	Attorney General's Chambers
CBO	Community-based Organisation
COAC	Centre of Orang Asli Concern
DID	Department of Irrigation and Drainage
DLM	Department of Lands and Mines
DLO	District and Land Office
DMGM	Department of Minerals and Geoscience Malaysia
DOE	Department of Environment
DSD	Department of Skills Development
DVS	Department of Veterinary Services
EPU	Economic Planning Unit
FDPM	Forestry Department Peninsular Malaysia
FR	Forest Reserve
FRIM	Forest Research Institute Malaysia
GLC	Government-Linked Companies
GPS	Global Positioning System
HEC	Human-elephant Conflict
HLI	Higher Learning Institutions
JIM	Immigration Department
JKKK	Village Development and Security Committee
JAKOA	Department of Orang Asli Development
JPA	Public Service Department
JSPC	Johor State Parks Corporation
KKDW	Ministry of Rural and Regional Development
LMO	Land and Mineral Office
MAFS	Ministry of Agriculture and Food Security
MAMPU	Malaysia Administrative Modernisation and Management Planning Unit
MAQIS	Department of Malaysian Quarantine and Inspection Services
MAZPA	Malaysian Association of Zoological Parks and Aquaria
MCMC	Malaysian Communications and Multimedia Commission
MEME	Management and Ecology of Malaysian Elephants
MERs	Managed Elephant Range
MFF	Malaysia Forest Fund
MIKE	Monitoring the Illegal Killing of Elephants
MOE	Ministry of Education
MOSTI	Ministry of Science, Technology and Innovation
MOT	Ministry of Transport
MOTAC	Ministry of Tourism, Arts and Culture
MOW	Ministry of Works
MPIC	Ministry of Plantations and Commodities
MPOC	Malaysia Palm Oil Council
MPOGCF	Malaysian Palm Oil Green Conservation Foundation
NGO	Non-Governmental Organization
NRECC	Ministry of Natural Resources, Environment and Climate Change
PBN	State Authority
PBT	Local Council
PSPC	Perak State Parks Corporation
PWD	Public Works Department
RMCD	Royal Malaysian Customs Department
RMP	Royal Malaysia Police
SEPD	State Economic Planning Department
SEPU	State Economic Planning Unit
SFD	State Forest Department
SMART	Spatial Monitoring And Reporting Tool
SFD	State Forestry Department
VAD	Veteran Affairs Department
WCB	Wildlife Crime Bureau

Trained elephants are used to assist in the elephant translocation programme

CHAPTER 01

Introduction



A herd of elephants was recorded at PPL Plantation, Pianggu, Mersing, Johor, using a drone by PERHILITAN Johor on 1 February 2021

1.1 Background

1.1.1 Distribution of Asian Elephants

Asian elephants (*Elephas maximus*) belong to the family Elephantidae under the order Proboscidea. The estimated global population of Asian elephants is around 48,323 to 51,680 in the wild and 15,000 in captivity. They are distributed across 13 range countries in Asia, including Bhutan, Bangladesh, Cambodia, China, India, Indonesia, Laos, Nepal, Sri Lanka, Myanmar, Malaysia, Thailand, and Vietnam (Menon & Tiwari, 2019) as shown in Figure 1.

There are four known subspecies of Asian elephants: the Sri Lankan subspecies (*E. m. maximus*), Indian subspecies (*E. m. indicus*), Borneo subspecies (*E. m. borneensis*), and Sumatran subspecies (*E. m. sumatranus*) (Fernando & Lande, 2000; Sukumar, 2003). The Sri Lankan elephant is the largest among these subspecies and is found in Sri Lanka. The Sumatran elephant is exclusively found in Indonesia. The origin of the Borneo subspecies (*E. m. borneensis*) is not yet fully understood (Rutten, 2009).

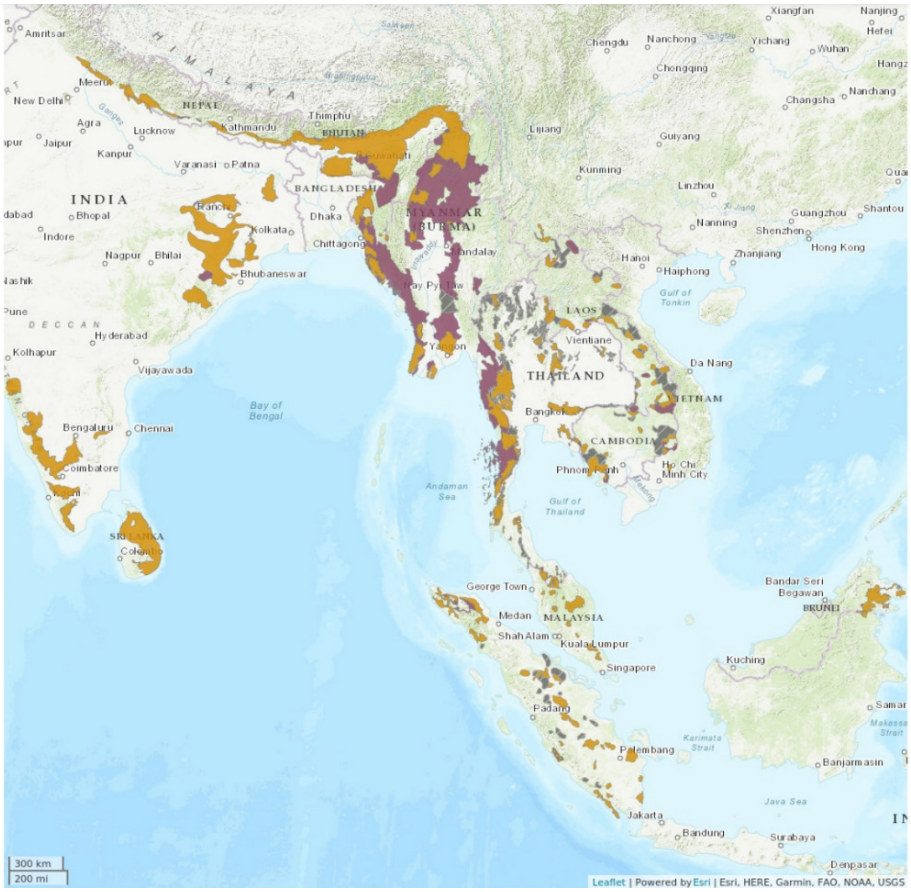


Figure 1: Asian elephant distribution according to Williams et al. (2020)

1.1.2 Distribution of Asian Elephants in Peninsular Malaysia

The primary habitat of elephants in Peninsular Malaysia is in lowland forest areas or on the edge of forests and around riverine areas. In secondary forests, elephant herds require a smaller grazing area than in primary forests as there are many food sources, such as bamboo, pioneer plants, palms and others. The primary forest, has less undergrowth vegetation and is dominated by large trees. However, elephants often frequent salt licks found in the forest to obtain mineral salts that are an essential source of dietary supplements.

Elephants in Peninsular Malaysia are mostly found in three Managed Elephant Ranges (MERs): Belum-Temengor Forest Complex, Taman Negara Forest Complex and Endau-Rompin Forest Complex. MERs include six states: Kedah, Perak, Pahang, Kelantan, Terengganu, and Johor (Figure 2).

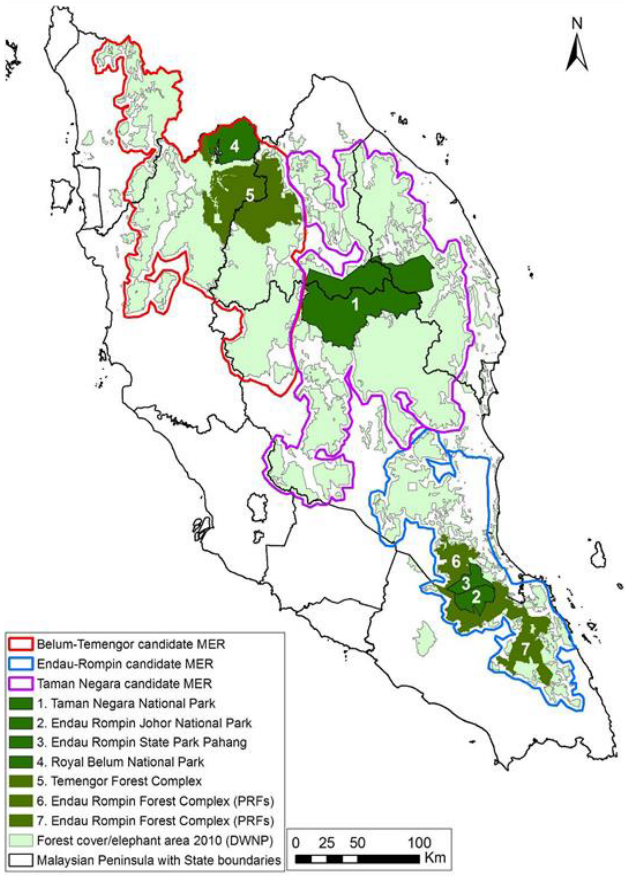


Figure 2: Managed Elephant Ranges (MERs) in Peninsular Malaysia (DWNP, 2013)

In Kedah, the main distribution of elephants involves the areas of Chebar Forest Reserve (FR), Ulu Muda FR, Rimba Teloi FR, Bukit Kemuning FR and Gunung Inas FR up to the border of Perak, namely Pengkalan Hulu and Bintang Hijau FR.

Meanwhile, Perak's primary elephants' habitat includes the Royal Belum State Park, Temengor FR, Papulut FR, and Piah FR. Gunung Basor FR in Jeli district, Kelantan, which borders Temengor FR, is the primary habitat of elephants that roam and sometimes cause human-elephant conflict (HEC) in the Jeli district.

The elephant distribution in Kelantan involves six districts, namely Jeli, Gua Musang, Kuala Krai, Tanah Merah, Machang, and Pasir Puteh. The Gua Musang district, which still has a large forest area, is the primary habitat for elephants apart from the Kuala Krai district. Meanwhile, the distribution of elephants in the Pasir Puteh district involves border elephants up to the Besut District, Terengganu, which distributes across Ulu Sat FR in Kelantan and Pelagat FR in Terengganu as a roaming area.

Kedah, Perak, and Kelantan have shared borders with Thailand, and there are possibilities for transboundary movement of Asian elephants between these three states and the southern part of Thailand. The forest in these areas is within the region of the Isthmus of Kra, the narrowest point in the Malay Peninsula, which is of biogeographic importance and interest.

The distribution of elephants in Terengganu covers the main habitats of Terengganu National Park, Tembat FR, Hulu Terengganu FR, Jengai FR, and Sg. Nipah FR. A group of elephants in the Kemaman district roamed the Kuantan district, Pahang, which includes habitats such as Cerul FR in the Kemaman district and Remen Chereh FR in the Kuantan district.

Elephant populations can be found in eight districts in Pahang: Jerantut, Lipis, Temerloh, Bentong, Bera, Maran, Rompin, and Kuantan. Elephant sightings were also reported in the Cameron Highland and Raub areas. Most elephant habitats in forest reserves connect to the Taman Negara Forest Complex and the Titiwangsa Range, such as Ulu Jelai FR, Yong FR, Som FR, Tekai FR, and Tekam FR. The elephant population in southern Pahang is scattered within Lesong FR and Taman Negara Rompin, which connects to the state of Johor. In central Pahang, the elephant population found in Bukit Ibam FR is associated with the elephant population in Tasik Bera RAMSAR Site. There is also an isolated population of elephants in Kemasul FR in the Temerloh district.

The distribution of elephants in Johor is relatively isolated in Southern Peninsular Malaysia, which covers the Endau-Rompin Forest Complex. It covers Lesong FR and Endau National Park in Pahang before projecting south through Endau-Rompin Johor National Park, Labis FR, Mersing FR, Lenggor FR, Ulu Sedili FR, Panti FR, and Seluyut FR. Elephants are generally distributed across four districts: Segamat, Kluang, Mersing, and Kota Tinggi. The fragmented habitat makes Johor one of the states that receive high elephant conflict complaints.

Negeri Sembilan also has a population of elephants originating from Kemasul FR, Pahang. This group of elephants entered Negeri Sembilan through Kg. Simpang Pelangai to Kenaboi FR were detected wandering in Pelangai FR, Serting FR, Triang FR and Berembun FR. Pressure on habitats at Kemasul FR forced some of Kemasul's elephants to move into Negeri Sembilan in early 2016.

1.1.3 Population Estimates

In 2011, the estimated elephant population and distribution were examined using various data sources and the dung count survey technique. The elephant population is estimated at 1,223 -1,677 in seven states, namely Kedah, Perak, Pahang, Terengganu, Kelantan, Johor and Negeri Sembilan (Saaban et al., 2011). The PERHILITAN has expanded the approach of elephant population assessment using DNA molecular tools and ecology-based methods such as dung count surveys. A preliminary project was carried out in 2016 by the PERHILITAN in Taman Negara National Park to carry out molecular DNA techniques to estimate the number of individual elephants. This study surveyed 52% of the Taman Negara National Park area, and elephant dung DNA samples were sampled and analysed at the National Wildlife Forensic Laboratory of the PERHILITAN. As a result, 217 individual elephants were identified with a percentage ratio of 60% to 40% (female : male). Elephant sex identification was analysed using DNA molecular techniques (Karuppannan, 2020). This study will be continued in the Taman Negara National Park to include areas not observed (Figure 3).

At present, various data collection techniques such as the molecular DNA technique, camera trapping through the 1st National Tiger Survey (1st NTS), indirect observation from the SMART Patrol, direct observation during elephant capture and controlling operations and photos or videos from drones, are considered primary sources used in estimating wild elephant populations in Peninsular Malaysia (Figure 4). A proper and standardised technique should be applied for more reliable elephant population estimates in the future (Figure 5).

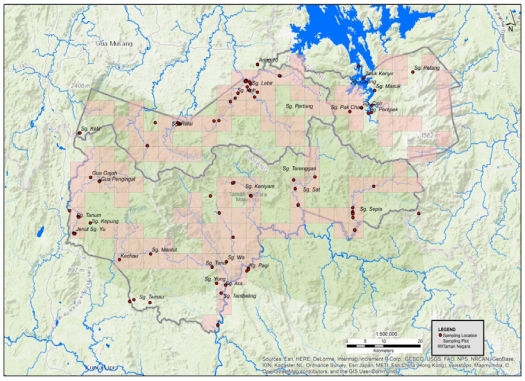


Figure 3: Elephant population study plots using DNA molecular methods in the Taman Negara National Park

Figure 4: Drone use for elephant surveys will be intensified especially in open areas

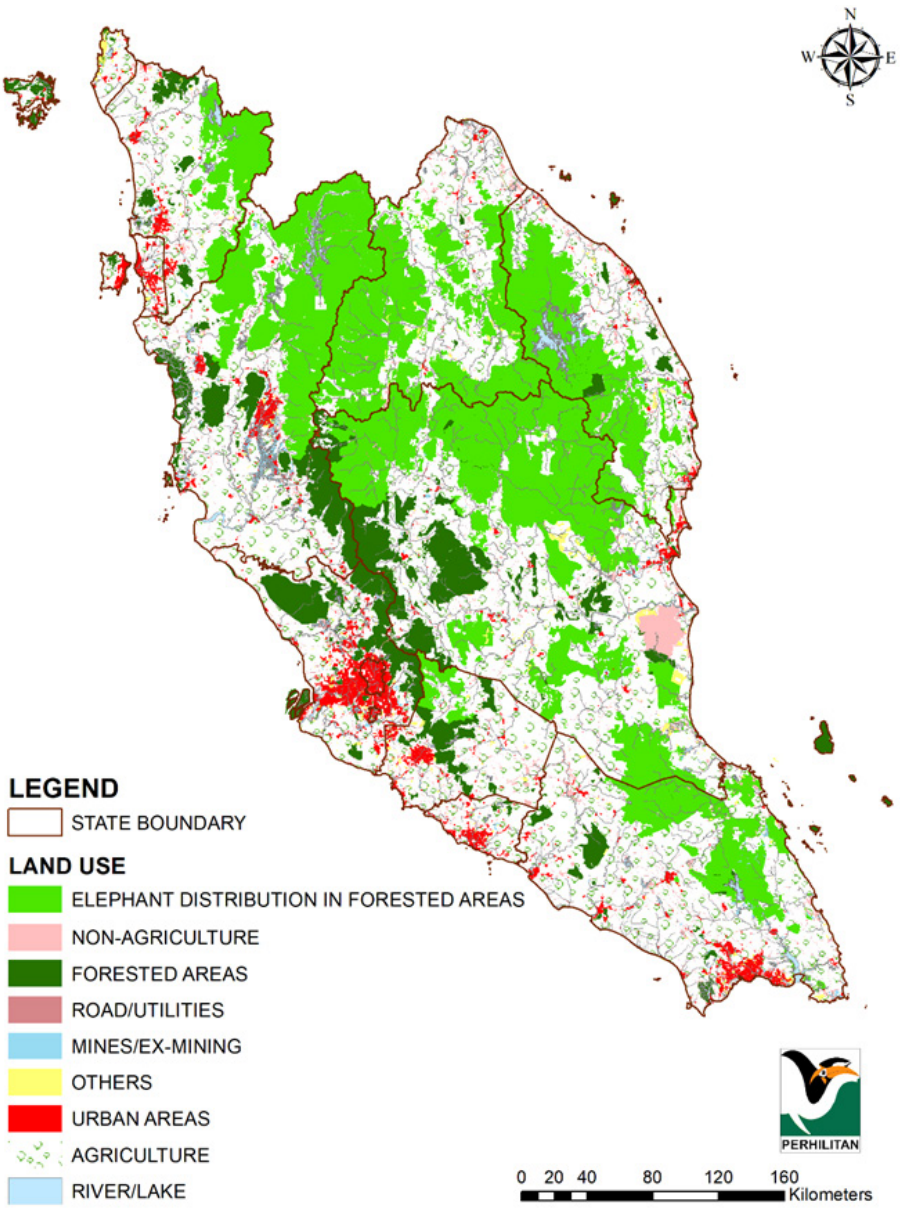


Figure 5: Distribution of elephants detected through various sources

1.2 Conservation Status

At the international level, the Asian elephant is listed as an endangered species under The International Union for Conservation of Nature (IUCN) Red List of Threatened Species and categorised in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In Malaysia, trade involving CITES species is subjected to the International Trade in Endangered Species Act 2008 [*Act 686*].

The Asian elephant is listed in the wildlife list under the Second Schedule of the Wildlife Conservation Act 2010 [*Act 716*]. As a fully protected species, any storage and activity involving Asian elephants are subjected to special permit requirements under Act 716 (Figure 6). Under this Act, any person convicted for hunting or keeping elephants or their parts or derivatives without a special permit can be fined not less than MYR50,000 and not more than MYR500,000 or imprisoned for a period not exceeding three years or both.

Upon conviction, any person who hunts or keeps a female elephant without a special permit can be fined a minimum of MYR20,000 for each female elephant. However, the fine cannot exceed MYR500,000 in aggregate or imprisonment for ten years or both. The penalty imposed for smuggling is a fine of MYR20,000 for each animal or part or derivative that can reach up to MYR1 million in aggregate and imprisonment for a period not exceeding 15 years.

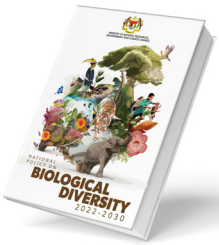
The offence for acts of cruelty such as injuring, beating, locking elephants in unsuitable premises, or use for labour can result in a penalty no less than MYR50,000 and not more than MYR100,000 or imprisonment not exceeding three years or both. Provoking or injuring an elephant that results in immediate danger to human life is deemed an offence under the law and can be fined no more than MYR50,000 or imprisoned for not more than three years or both.

Figure 6: Wildlife Conservation Act 2010 (Act 716)

1.3 Relevant IUCN Policies and Regulations

In addition to the continuation of NECAP (2013-2022), the preparation of NECAP 2.0 is closely related to the implementation of the central policies and regulations issued by the International Union for Conservation of Nature (IUCN), where the PERHILITAN has been a State Member since 1961. They include:

1.3.1 National Policy on Biological Diversity 2022 – 2030



National Policy on Biological Diversity 2022-2030 (NPBD) establish a policy statement that Malaysia is committed to conserving its biological diversity, promoting its sustainable use and ensuring the fair and equitable sharing of benefits arising from utilising natural resources. The implementation of this policy will be guided by five principles, namely heritage, precautionary, shared responsibility, participatory and good governance, by establishing five goals and 17 targets set throughout the implementation period of NPBD.

1.3.2 Malaysia Policy on Forestry

Malaysia's Policy on Forestry through **Thrust 02 Conservation of Forest Biodiversity** emphasis **enhanced focus on conserving forest biodiversity to prevent ecosystem degradation, species extinction and depletion of genetic resources**. The two strategies formulated for this core are the conservation of forest biodiversity and **improved knowledge and scientific documentation on forest biodiversity**.

1.3.3 National Physical Plan (NPP4)

The **Fourth National Physical Plan (NPP4)** has outlined **Thrust 02 Spatial sustainability and climate change, focusing on holistic land use planning and sustainable management of national resources** supported by development towards a carbon-neutral country. The **KD2 strategy of sustainable management of natural, food, and heritage resources** is implemented through several actions, which are **preserving and conserving the country's ecological assets and managing and regulating development in Environmentally Sensitive Areas**.

1.3.4 Twelfth Malaysian Plan 2021-2025

The **Twelfth Malaysian Plan (RMK-12)** stipulates under Chapter 8 Advancing Green Growth for Sustainability and Resilience by setting the direction of **Priority Area B: Managing Natural Resources Efficiently to Safeguard Natural Capital**. Among the strategies set is **protecting and conserving species and genetic resources** and strengthening **the management and conservation of species**.

1.3.5 Rural Development Policy

Protecting **wildlife habitats and biodiversity areas in rural areas** is emphasised in the **Rural Development Policy under Core 09, Sustainable Biodiversity and Environment**, by establishing strategies that monitor the survival and sustainability of regions designated as wildlife habitats and biodiversity and solve human-wildlife conflict in settlement areas and rural economic activities.

1.3.6 Master Plan For Ecological Linkages Central Forest Spine (PIRECFS) 2022

The **Master Plan For Ecological Linkages Central Forest Spine (PIRECFS) 2022** is an initiative to connect forest areas in Peninsular Malaysia based on the provisions of Action KD2.1D, the 4th National Physical Plan (RFN 4), which is "Creating and strengthening the implementation of terrestrial and marine ecological corridors". The five objectives of PIRECFS are **practical planning and development control, integrated biodiversity preservation and conservation, sustainable socio-economic development, effective governance and comprehensive public awareness, and reinforcement of more efficient law**.

1.3.7 National Agrofood Policy 2.0 2021-2030

The N**ational Agrofood Policy 2.0 2021-2030** focuses efforts to **promote preserving and conserving biodiversity and natural resources for sustainable agriculture**. This strategy is implemented through three action plans, which are to develop and create a core collection of microbes, insects, varieties and breeds with characteristics that are more resistant to pests, diseases and climate change, as well as promote integrated pest management, enhancing the protection of local ecosystems against the threat of Invasive Alien Species (IAS) and **strengthen the agrofood sector and best practices to protect sensitive environmental areas and ecosystems**.

1.3.8 National Agricommodity Policy 2021-2030 (DAKN2030)

The **National Agricommodity Policy 2021-2030 (DAKN2030)** has set a strategy to leverage innovative partnerships for technological adoption in the palm oil industry through five cores. One of those cores is Sustainability: Capture the leading position in sustainability that involves strategies to **increase environmental conservation and management efforts. To strengthen biodiversity conservation and sustainability, environmental conservation projects will be funded through greater government-industry collaboration, such as through the Malaysian Palm Oil Green Conservation Foundation (MPOGCF)**. A biodiversity conservation plan in oil palm plantations will be developed and implemented along with **awareness programmes on the value of biodiversity conservation among smallholders and plantation managers**.

1.3.9 National Construction Policy 2030

The construction sector could highly influence the goals in ensuring that the country's international sustainability commitments are applied in all aspects of national construction development. National Construction Policy has set **Thrust 2: Embrace Sustainable Built Environment**, in line with **Strategy 4.2.3, To develop environmental-friendly design to conserve and preserve nature**.

1.3.10 The Kathmandu Declaration for Asian Elephant Conservation

The Kathmandu Declaration for Asian Elephant Conservation was adopted during the 3rd Asian Elephant Range States Meeting on 27-29th April 2022 in Kathmandu, Nepal. In general, this declaration stipulates that every country that has wild population of Asian elephants commits to conservation efforts through connecting habitats, effective human-elephant conflict management, promoting coexistence, encouraging the conservation of Asian elephants across borders, enhancing bilateral and multilateral cooperation between 13 countries and share knowledge and best practices to improve conservation efforts.

1.3.11 IUCN SSC Guideline on Human-Wildlife Conflict and Coexistence

The guidelines were launched during the International Conference on Human-Wildlife Conflict and Coexistence in Oxford, UK, from 30 March to 1 April 2023. The Guideline provides essential guidance for understanding and resolving human-wildlife conflict. It provides a foundation and principles for best practice, with clear and practical guidance on dealing with conflict and enabling coexistence with wildlife. This Guideline has been developed to be used by conservation practitioners, community leaders, decision-makers, researchers, Government and others. It focuses on approaches and tools for analysis in decision-making and is not limited to any particular species or region of the world.

1.4 Threat

1.4.1 Habitat loss

Habitat loss has significantly threatened elephants in Malaysia and the Asian Elephant Range States for many decades. Many anthropogenic factors lead to habitat loss, for example, agriculture, mining, the construction of hydroelectric dams, the development of new settlements and the construction of linear infrastructures, power lines and railway lines (Menon & Tiwari, 2019).

From 1948 to 1978, forest management in Peninsular Malaysia adopted the Malayan Uniform System (MUS), where many lowland forest reserves were opened to develop the timber industry via rotational logging. However, this system has been replaced since 1978 with the Selective Management System (SMS) to enable forests to be managed sustainably via certification (Ng, 2000). However, these forest reserves can still be degazetted and converted to other land use alongside forest on state land. This situation has caused the loss of most major elephant forest habitats. In 1957, forested land in Peninsular Malaysia was estimated at 74% (Myers, 1980). Forest cover declined from 69% in 1966 to 55% in 1978 and 47% in the 1990s (Sham, 1999). In 2000, forested land was reduced to 45.43% (JPSM, 2001). By 2010, forested land accounted for 44.5% of Peninsular Malaysia (JPSM, 2011) and 43.7% in 2017 (JPSM, 2018) (Figure 7).

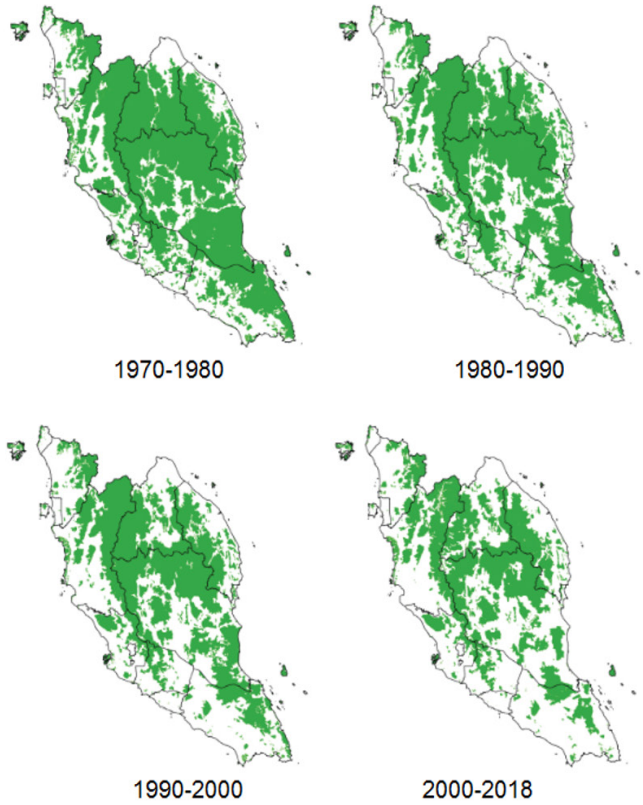


Figure 7: Changes in forest cover in Peninsular Malaysia from 1970 until 2018 (Map produced with reference to the FDPM Annual Report)

In line with the Government's policy to eradicate poverty, especially for rural communities, huge lowland forests were converted into agricultural land, causing significant elephant habitat loss (Figure 8). To achieve the objective, the Government established several agricultural agencies, such as the Federal Land Development Authority (FELDA) in 1956, the Federal Land Conversion and Rehabilitation Authority (FELCRA) in 1966, and the Rubber Industry Smallholding Development Authority (RISDA) in 1973 (Saaban et al., 2011). For example, in the 1960s and 1970s, many lowland forest areas were converted to oil palm (*Elaeis guineensis*) and rubber (*Hevea brasiliensis*) plantations.

In addition, thousands of hectares of elephant habitat were inundated when large-scale hydroelectric dams were constructed, such as the Temenggor Dam in 1979, the Kenyir Dam in 1985, the Linggiu Dam in 1993, and the Hulu Terengganu Dam in 2016 (Figure 9). A study by Magintan et al. (2020) in Hulu Terengganu found that elephants can adapt to habitat changes, provided they still have a sufficiently large and undisturbed home range. Rapid development and opening areas for new settlements and townships have also resulted in constructing linear transportation infrastructures, such as roads and highways,that isolate existing elephant habitats (Ament et al., 2021).

Figure 8: The opening of areas for agricultural activities especially in elephant habitat creates human-elephant conflict

Figure 9: The opening of forest areas for the Hydroelectric Project caused the permanent loss of elephant habitat

1.4.2 Elephant Killing and Mortality

The large-scale opening of agricultural areas has caused human-elephant conflict (HEC), which sometimes lead to the illegal killing of elephants by poisoning or shooting. Before 1972, the approach to dealing with HEC was to shoot or drive away the elephants. For example, from 1959 to 1969, as many as 120 elephants were shot dead by the Game Warden rangers to overcome HEC (Mohd Khan, 1992). However, this practice was stopped in 1974 when the PERHILITAN established an Elephant Capture Unit to capture and translocate elephants in conflict areas to a more suitable habitat, such as Taman Negara National Park and Belum Forest Reserve.

The black-market demand for the illegal trade of ivory has triggered poaching activities. It occurs in the forest fringe areas, easily accessible by four-wheel drive vehicles. Evidence also suggests that irresponsible parties have begun using poachers to dispose of elephants that cause conflict in their area (Figure 10) or use poison to retaliate on agricultural damage (Figure 11).

Figure 10: The carcass of a male elephant killed by poachers at Lesong FR, Rompin, Pahang was found on 12th October 2016

Figure 11: The carcass of a male elephant that was poisoned near the Orang Asli Village of Sedohok, Kluang, Johor on 12th December 2019

From 2015 to 2021, up to 116 elephant deaths were reported, ranging from 10 to 23 cases yearly (Figure 12). Fifty cases (43%) of illegal killing have been recorded, primarily due to poaching and poisoning (Figure 13). In addition, 38 cases (33%) of elephant deaths were due to management factors such as post-capture stress, or the elephant had to be shot for self-defence during the elephant-capturing operation (Figure 14).

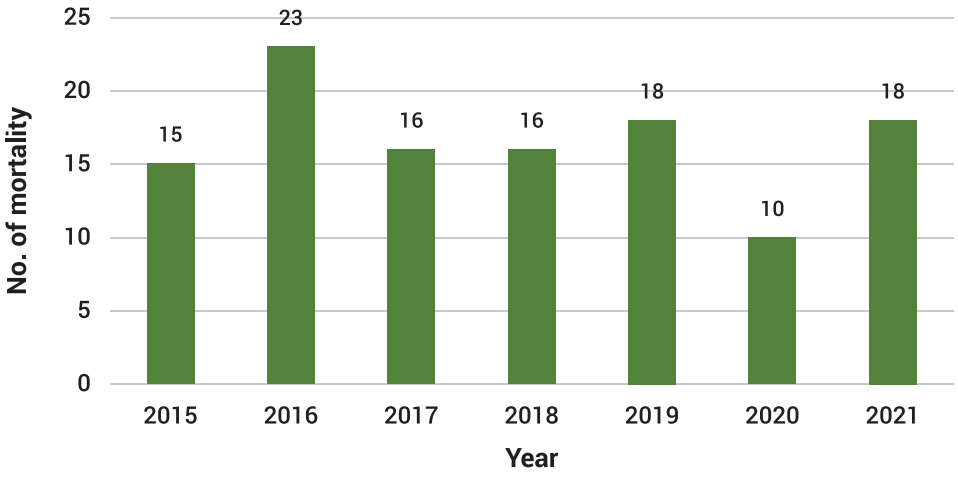


Figure 12: Elephant mortality record from 2015 to 2021

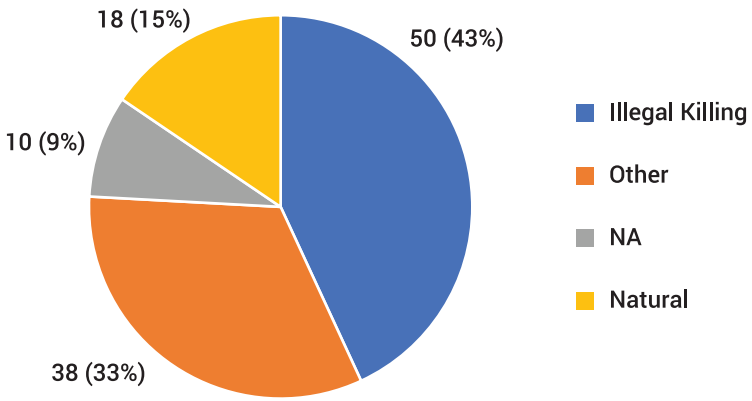


Figure 13: Elephant mortality types classification record from 2015 to 2021

Figure 14: A male elephant that had to be shot dead after an attempt to attack staff during operation in Kg. Pasir Kelang, Kuala Krai, Kelantan on 4th February 2021

Eight elephants died from elephant-vehicle collisions from 2015 to 2021, involving two hotspots: the East-West Road (JRTB), Perak and Kota Tinggi-Mersing Road, Johor (Table 1). Linear transportation infrastructure which cuts across elephant habitats can negatively impact elephant movements, resulting in road kills (Figure 15 and Figure 16; Wadey et al., 2018; Wong et al., 2018b). Most roadkill occurred at night or early in the morning when drivers' visibility was limited due to the presence of fog or in dark areas without streetlights. Additionally, the drivers were sometimes speeding in violation of traffic rules or needed to be taught about the wildlife crossing areas despite the presence of warning signboards. The Malaysian Government has built several viaducts to facilitate wildlife crossings, including for elephants, at JRTB in Perak, Aring-Kenyir Road in Terengganu and Sg. Yu Wildlife Corridor in Pahang. Another new viaduct will be built on Kota-Tinggi-Mersing Road in Johor.

Figure 15: An adult elephant died after being hit by a truck while crossing at Mile 7, Kota Tinggi-Mersing Road on 18th March 2021

Figure 16: A calf died after being hit by a car at Mile 10, Kota Tinggi-Mersing Road on 1st September 2020

YEAR	DATE	ROADKILL'S LOCATION	STATE
2017	16.06.2017	KM. 43.6, East-West Road	Perak
2017	24.08.2017	KM. 60, East-West Road	Perak
2018	21.05.2018	Mile 14, Kota Tinggi-Mersing Road	Johor
2019	28.07.2019	KM. 44, Gawi-Aring Road	Terengganu
2019	06.10.2019	Mile 13, Kota Tinggi-Mersing Road	Johor
2020	01.09.2020	Mile 10, Kota Tinggi-Mersing Road	Johor
2021	17.01.2021	RPS Banun junction, East-West Road	Perak
2021	18.03.2021	Mile 7, Kota Tinggi-Mersing Road	Johor

Table 1: Elephant roadkill's record based on location and state (2015 – 2021)

1.4.3 Human-Elephant Conflict (HEC)

The types of HEC reported to the PERHILITAN were mainly elephants involved in crop raiding, wandering (causing fear), ranging (neutral), property damage, and human injury or death. Generally, from 2015 to 2021, most cases of HEC occurred in agricultural areas and settlements adjacent to elephant habitats. This finding is similar to de le Torre et al. (2022), who found that wild GPS-collared elephants mostly utilise agricultural areas and disturbed forest landscapes. In addition, the attractive, abundant and easy-to-get food sources have encouraged elephants to look for food outside forested areas (Figure 17).

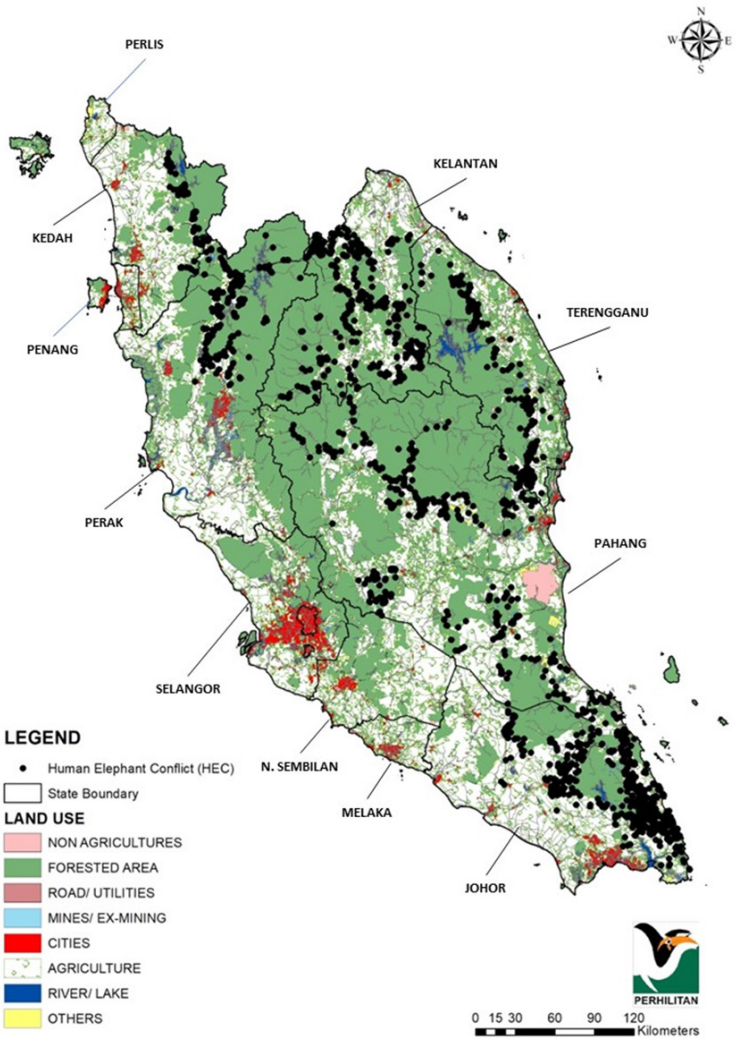


Figure 17: The distribution of HEC in Peninsular Malaysia (2015 – 2021)

The number of complaints received by the PERHILITAN on elephant disturbances from 2015 to 2021 was 3,325, or a yearly average of 475 complaints (Figure 18). The complaints received showed an increase of 143.4% within the seven years. Kelantan recorded the highest rate of HEC complaints at 1,225 (37.7%) or an average of 179 complaints yearly, followed by the state of Johor at 658 complaints (19.8%). Negeri Sembilan recorded the lowest HEC, with only 14 complaints (0.4%), since it has a very small elephant population compared to other states (Figure 19).

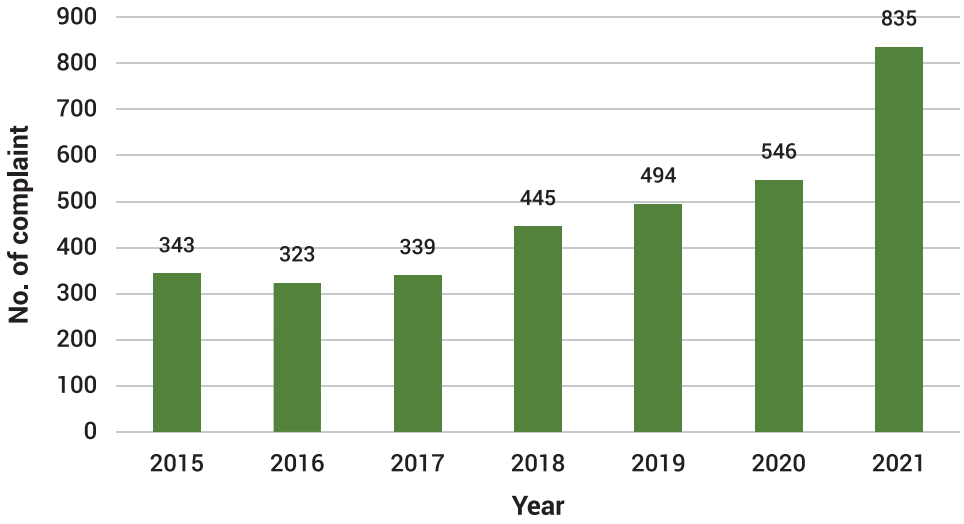


Figure 18: The HEC records from 2015 to 2021

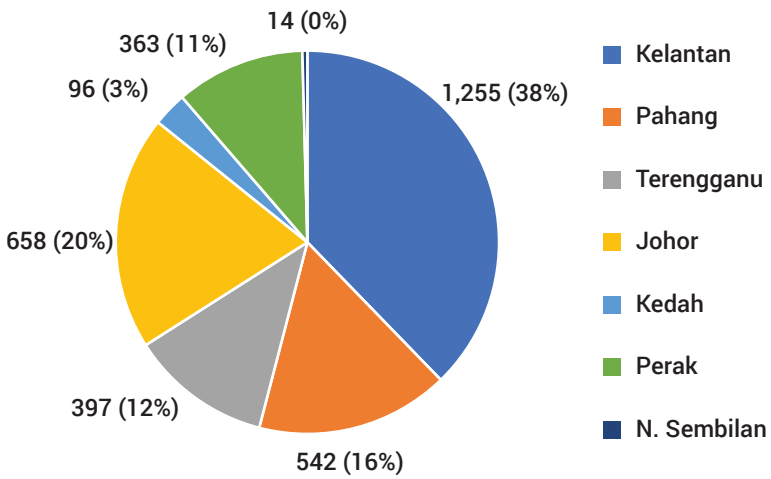


Figure 19: Fraction of HEC complaints according to the states from 2015 to 2021

All states recorded an estimated loss of about MYR42.5 million due to HEC from 2015 to 2021 (Figure 20). Kelantan recorded the highest estimated loss rate of MYR17.6 million, while Negeri Sembilan recorded the lowest of MYR32,000 (Figure 21). Most of the losses were due to damage to oil palm trees, which is the main crop grown in most plantations adjacent to the elephant habitat. The economic loss would be much higher considering the management costs involved and the expected yield from the destroyed trees. Not all HEC occurrences were reported by the victims to PERHILITAN. Therefore, the actual crop damage losses caused by elephants could be much higher.

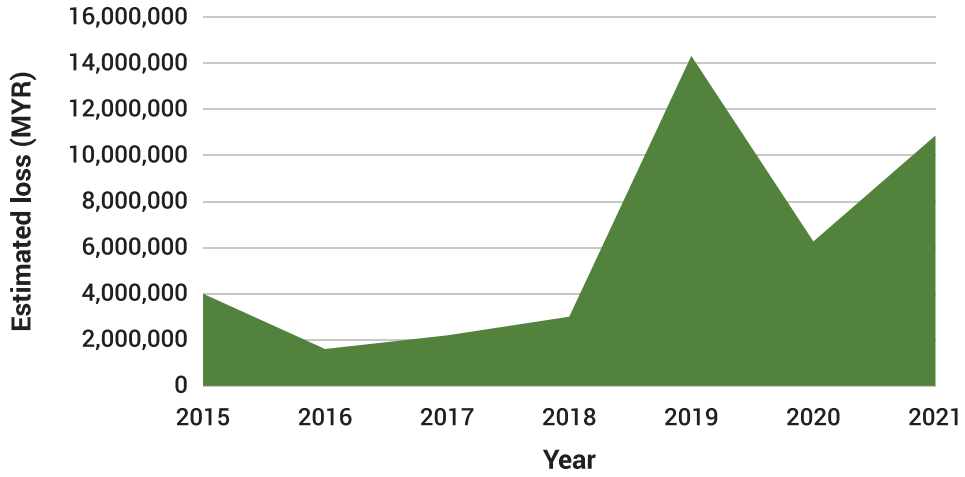


Figure 20: Estimated loss due to HEC from 2015 to 2021

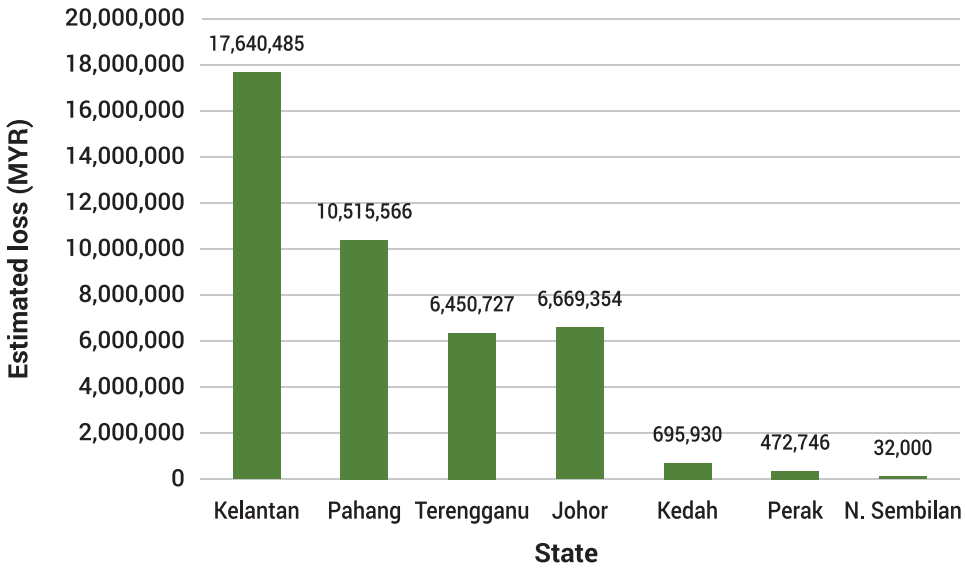


Figure 21: Estimated loss due to HEC by state (2015 – 2021)

Besides crop damage, HEC in Peninsular Malaysia caused human injuries and fatalities. From 2015 to 2021, records show that 22 people had a dangerous encounter with elephants. Of this number, nine people died, and the rest suffered injuries (Figure 22). The state of Johor recorded the highest number of attacks involving ten victims, followed by Perak with eight, Kelantan with three, and Kedah with one victim (Table 2). Follow-up investigations revealed that the victims had ventured too close to the elephants and did not have time to escape when the elephant was charging. The incidents usually occur in plantation areas or forests during early morning or late evening when the elephants are starting to enter the plantation areas or return to the forest. The victims sometimes approached elephants while taking pictures or videos, contributing to the elephant attack. There were also cases where elephants attacked three PERHILITAN staff during elephant translocation operations. PERHILITAN assisted all victims or their next of kin in applying for the Victims of Wild Animals Attack Aid Fund under the supervision of the Social Welfare Department.

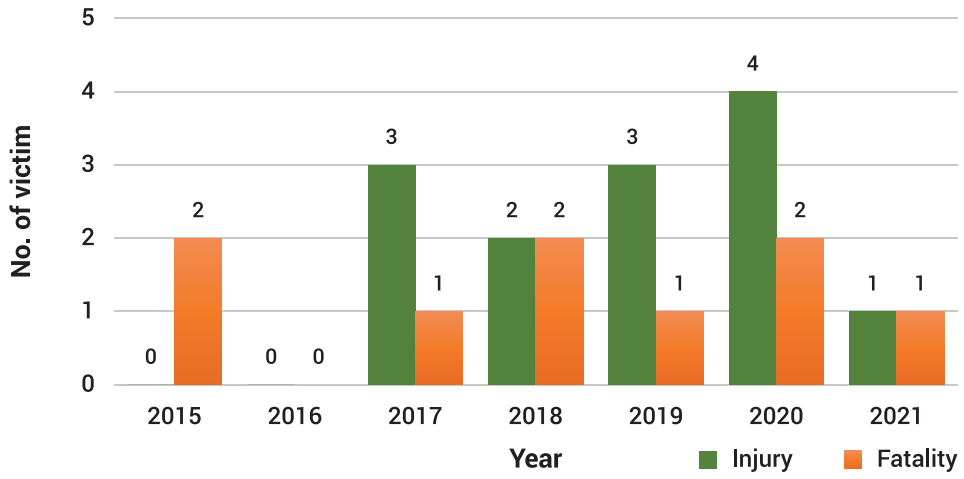


Figure 22: Humans attacked by elephants from 2015 to 2021

Year	Perak		Johor		Kedah		Kelantan	
	Injury	Fatality	Injury	Fatality	Injury	Fatality	Injury	Fatality
2015		1		1				
2016								
2017	2		1	1				
2018	2			1		1		
2019	2		1	1				
2020	1		1	2			2	
2021				1			1	
TOTAL	7	1	3	7	0	1	3	0

Table 2: Record of elephant attacks on humans by state (2015 – 2021)

1.5 Assessment of NECAP (2013-2022) Achievements

On 21 October 2021, the PERHILITAN conducted a NECAP (2013-2022) Achievement Review Workshop at Putrajaya and invited various government agencies and relevant NGOs (Figure 23). Based on the NECAP assessment, a total of 43 (60.76%) actions had been implemented successfully, 20 (28.13%) actions were in progress, and 8 (11.11%) actions still need to be implemented (Figure 24). Most implemented actions were routine activities of the PERHILITAN and the relevant agencies directly or indirectly involved. As NECAP (2013-2022) does not have a specific budget allocation, there were several constraints during the execution of the action plan. For example, the lack of staffing to carry out large-scale activities such as elephant population assessment is one of the constraints faced, apart from the need for more expertise in carrying out related work. Additionally, the involvement of multiple agencies in elephant habitat conservation and HEC, especially at the state level, made implementation tough and challenging.

Figure 23a: The NECAP (2013-2022) Achievement Review Workshop was successfully conducted on 21st October 2021 at Putrajaya

Figure 23b: The NECAP (2013-2022) Achievement Review Workshop was successfully conducted on 21st October 2021 at Putrajaya

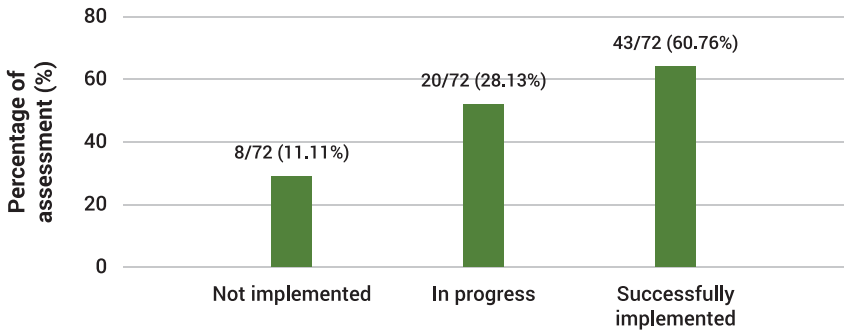


Figure 24: Assessment status of NECAP actions carried out from 2013 to 2022

1.6 Current Status and Conservation Efforts

1.6.1 Management of Elephants in Captivity

As of 2021, nine premises were allowed under Act 716 to possess and display elephants for ecotourism or conservation purposes (Table 3). Each elephant ownership must have a Special Permit approved by the Minister and comply with the Conservation Regulations enforced by the PERHILITAN. The regulations entail the minimum requirements for enclosure sizes, husbandry standards and the welfare standard of captive elephants. While this Plan was being produced, 86 elephants, consisting of 26 males and 60 females, were kept in various Conservation Centers, zoos and permanent exhibition premises. Each elephant in captivity has been micro-chipped for registration and monitoring purposes. In addition, every year, the PERHILITAN celebrate World Elephant Day as one of the awareness programs for elephant conservation effort (Figure 25).

LOCATION	OWNERSHIP	MALE	FEMALE	TOTAL
National Elephant Conservation Center (NECC)	PERHILITAN	9	23	32
Sg. Deka Elephant Conservation Center (SDECC)	PERHILITAN	2	6	8
A'Famosa Safari Wonderland	*A'Famosa Safari Wonderland* Sdn. Bhd.	1	8	9
Kenyir Elephant Conservation Village (KECV)	Terengganu Tourism Department	9	9	18
Recreation Park & Kemaman Zoo	Kemaman City Council	1	1	2
Malacca Zoo	Hang Tuah Jaya City Council	0	3	3
Malacca Zoo	*Malaysian Zoological Society* (MZS)	0	2	2
Taiping Zoo & Night Safari	Taiping City Council	3	7	10
Johor Zoo	Johor State Government	1	1	2
	TOTAL	26	60	86

Table 3: Record of elephants' numbers in captivity and their location (2015 – 2021)

Figure 25: The 2015 World Elephant Day celebration was held at the National Elephant Conservation Center, Kuala Gandah, Pahang to raise awareness of the importance of elephant conservation to visitors

1.6.2 Elephant Translocation

Elephant translocation is considered the last resort to address HEC. However, there are occasions where the translocation needs to be done immediately to reduce the impact of destruction or for public safety and security reasons. The PERHILITAN will assess the situation carefully from all perspectives before carrying out the capture operation. Usually, the individual elephants in pocketed forests, not successfully driven back into the forest or present too close to residential areas, will be considered for capture and translocation after all reasonable efforts have been taken.

From 2015 to 2021, 270 elephants were successfully captured and relocated to a new habitat, such as Terengganu National Park, Johor Endau-Rompin National Park, and Royal Belum State Park (Figure 26). Kelantan is the state with the most (27%) elephants captured, followed by Perak (20%), Johor (18%), Pahang (17%) and Terengganu (11%) (Figure 27). Meanwhile, 2021 recorded the highest number of elephants captured (73), mainly in Kelantan, especially in the district of Jeli.

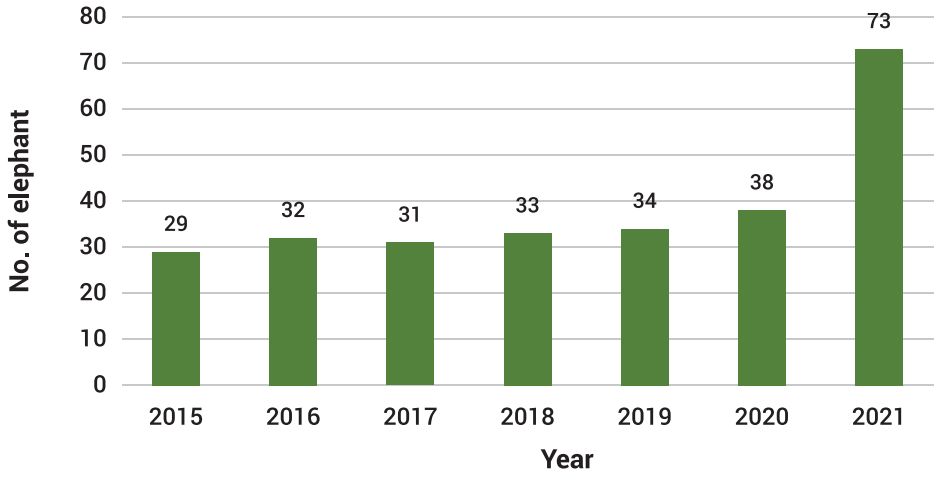


Figure 26: The record of the capture of conflict elephants from 2015 to 2021

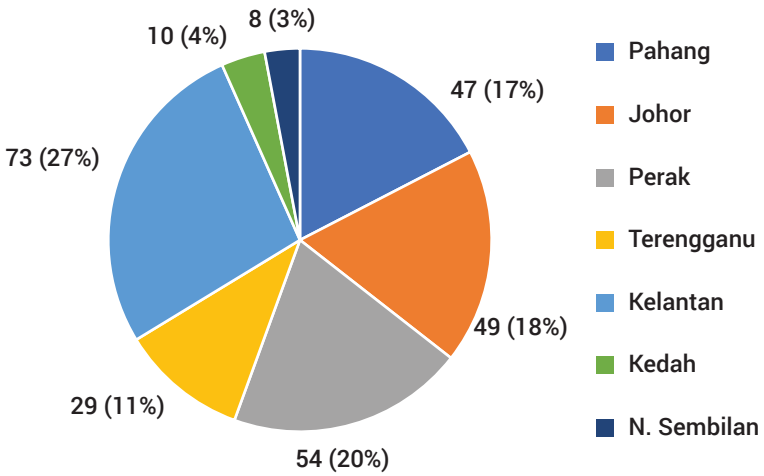


Figure 27: States with the conflict elephant captures (2015 – 2021)

1.6.3 Elephant Electric Fence System (SPEG)

The electric fence serves as a psychological barrier for elephants, giving them a slight electric shock upon contact with the wires. Plantation owners have implemented this mitigation measure to safeguard their land from elephants roaming in the area for decades. The Elephant Electric Fence System was introduced by PERHILITAN specifically for village areas in 2009. The first SPEG covered a range of 15 kilometres from Kg. Orang Asli Sg. Rual to Kg. Pasir Dusun in Jeli, Kelantan. There are 17 SPEG projects across Perak, Pahang, Terengganu, Kelantan, and Johor states, with an overall fence length of 303.4 kilometres. Ponnusamy et al. (2016) examined the public's attitude towards these initiatives and discovered a generally favourable outlook and endorsement of the efficacy of electric fences, with respondents perceiving a considerable decrease in HEC. They also expressed backing for the continuation of such projects in the future. However, they were reluctant to have elephants nearby, even with the presence of electric fences. Thus, it is suggested that PERHILITAN should intensify efforts to boost public tolerance towards coexisting with elephants in their vicinity.

Did You Know?

The PERHILITAN has collaborated with FELDA and the Malaysian Palm Oil Council (MPOC) in publishing the SPEG Equipment Specification and Maintenance Guidebook for public reference (Figure 28). Based on the PERHILITAN experience, the maintenance of SPEG is essential to ensure the electric fences are consistently well functioning. Daily monitoring and regular maintenance are crucial. Plantation owners are advised to establish a particular unit to manage the fences or appoint a company to help install and maintain the electric fences.

Figure 28: A guidebook published by PERHILITAN in collaboration with FELDA and MPOC

1.6.4 Enforcement Operations

Elephant poaching for ivory is a significant issue in Malaysia, with efforts to combat the problem resulting in the successful prosecution of at least three groups of poachers. The success of these enforcement operations can be attributed to intelligence activities conducted by the PERHILITAN in collaboration with the Royal Malaysian Police (RMP) and the Malaysian Armed Forces. Through Khazanah Integrated Operations and 1Malaysia Biodiversity Enforcement Operation Network Programme (1MBEON), elephant hunting syndicates were identified in Kelantan, Perak, and Pahang. These poachers typically use homemade firearms or weapons smuggled from neighbouring countries. When cases involve firearms, perpetrators are handed over to RMP for prosecution under the Firearms Act 1960 [*Act 206*]. Between 2017 and 2020, a total of 12 cases resulted in 25 arrests across these states.

Figure 29: Press conference on the success of 1MBEON's operation in defeating an illegal elephant poaching syndicate in the state of Kelantan on 13th February 2017

Figure 30: Press conference with RMP on the success in defeating an illegal elephant poaching syndicate in the state of Perak on 13th March 2018

1.6.5 Elephant-based Research

From 2015 to 2021, researchers from multiple universities, NGOs or PERHILITAN staff carried out various elephant-based research projects. Most studies focus on ecology, movement, home range, and elephant habitat utilisation. The use of GPS collars has become a popular research method since elephants have an extensive home range, and it is not easy to study their movements in the forest due to the lack of direct sightings (Suhaida et al., 2015; Wong et al., 2016; Magintan et al., 2019; Wong et al., 2018a; de la Torre et al., 2019; Saaban et al., 2020; de la Torre et al., 2021; Saaban et al., 2021; de la Torre et al., 2022). The data obtained were then analysed using ArcGIS software or R statistical packages and were supported by field data collection.

A total of 85 GPS collar units have been deployed on wild elephants involving the research project Management and Ecology of Malaysian Elephants (MEME) under the University Nottingham Malaysia (UNM), the Tenaga Nasional Berhad (TNB) Research-University Kebangsaan Malaysia (UKM) Project, the Central Forest Spine (CFS) Project and the Elephant Management Development Project under the PERHILITAN purview (Figure 31). Various research papers and books have been published as a reference for stakeholders. The study results have also been disseminated through multiple platforms, such as seminars, conferences, symposiums, meetings, and workshops.

Elephant population estimation studies and elephant feeding preferences studies using molecular DNA techniques and Next Generation Sequencing (NGS) techniques were also conducted by PERHILITAN research officers (Karuppannan et al., 2019; Karuppannan et al., 2020; Mohd-Radzi et al., 2022; Abdullah-Fauzi et al., 2022). In addition, a special publication titled Elephant Perspective on Conservation Genetics has also been published as a result of the study. Meanwhile, at Ulu Muda FR, Kedah, a study of elephant population estimates using molecular DNA techniques is being conducted by a PhD researcher under MEME from UNM.

Figure 31: The installation of GPS collars on elephants can help in understanding the movement patterns and habitat use of elephants to facilitate in field management

1.6.6 Elephant Habitat Connectivity

The Government realises that the loss and fragmentation of habitat is one of the contributors to HEC. Accordingly, a Master Plan for Ecological Linkages Central Forest Spine (CFS) was introduced in 2010 and has identified a total of 37 ecological linkages, which include 17 Primary Linkages (PLs) and 20 Secondary Linkages (SLs). Of these, 28 ecological linkages (17 PLs and 11 SLs) are included in the MERs. A study conducted using 220,000 GPS location data from 53 elephants fitted with GPS collars showed that in terms of functional connectivity, 57% of the ecological linkages were highly functional connectivity, 28% provided acceptable connectivity, and 14% of them had low to no connectivity (de la Torre et al., 2019).

To support the connectivity between these ecological linkages, the Government has allocated approximately MYR132.3 million from 2007 to 2015 to build three viaducts in Terengganu, three viaducts in Pahang and one viaduct in Perak (Figure 32). Another viaduct is under construction in the state of Johor. As a result of a review done by PLANMalaysia in 2022, 39 ecological linkages have been identified and recognised in The Master Plan for Ecological Linkages Central Forest Spine (PIRECFS) 2022 whereby a total of 30 ecological linkages have been identified as significant for elephant corridors. Most of the proposed corridors are based on HEC records and GPS-collared elephants' movement records by the PERHILITAN. Various methods and recommendations have been included in the PIRECFS 2022 Guidelines for the consideration of all stakeholders.

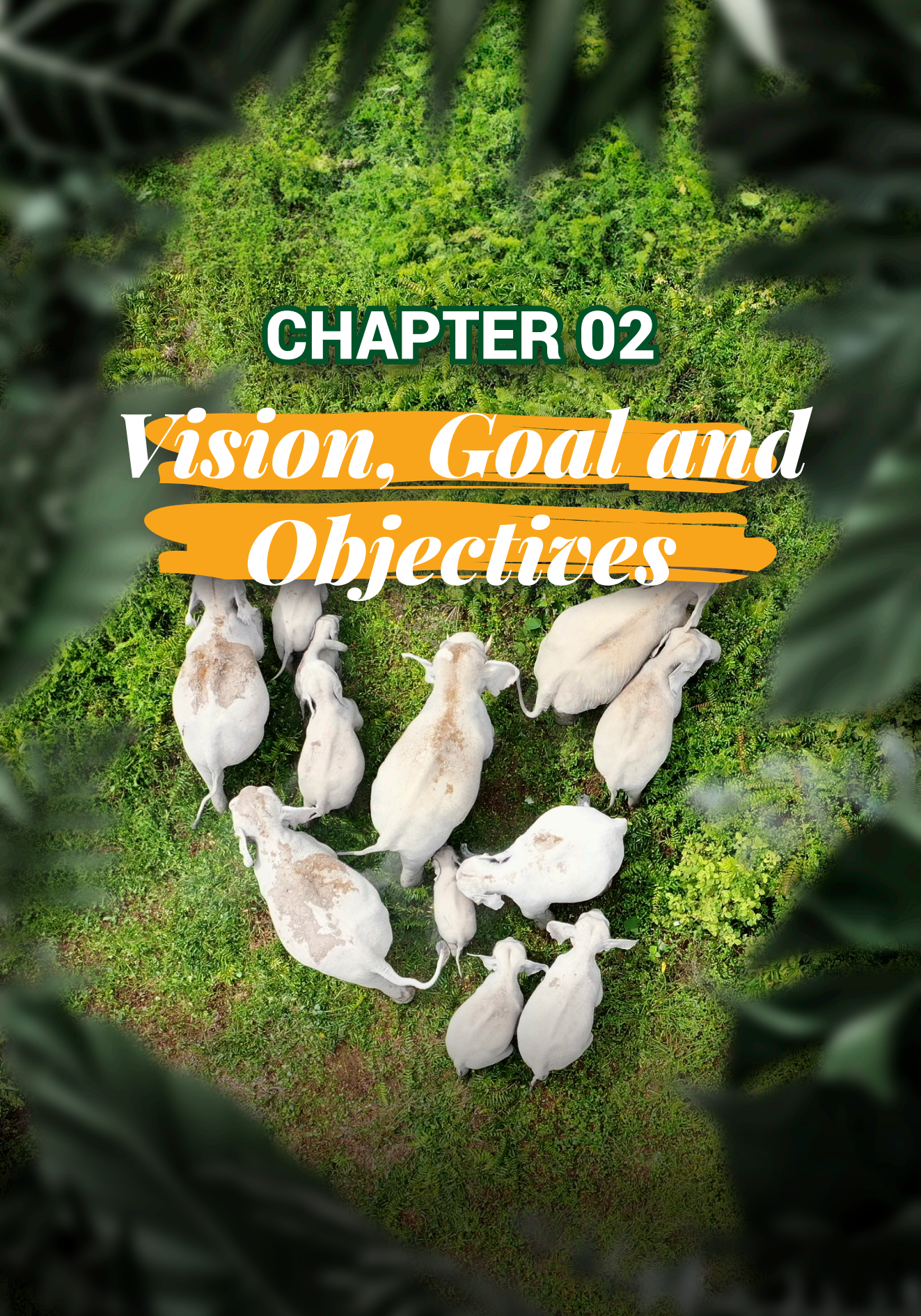
Figure 32: Viaduct in Gerik, Perak (CFS 1 PL 2: Temenggor FR – Royal Belum State Park) completed in 2015 that cost RM25 million

1.6.7 Installation of Signboard and Street Light at Elephant Crossing Area

To reduce the risk of roadkill involving wildlife such as elephants, the PERHILITAN, in collaboration with the Department of Public Works (JKR) and Local Authorities (PBT), have installed more than 250 signboards, 40 transverse bars and 25 amber lights in the main wildlife crossing areas throughout Peninsular Malaysia (Figure 33). In addition, through the CFS Management and Development Project under the FDPM purview, 17 units of billboards and 26 units of signboards have been installed in various ecological linkages from 2017 to 2020, which are also corridors for elephants. The MPOGCF also assisted by contributing 300 wildlife crossing signboards to be installed in roadkill hotspot areas. Furthermore, in PIRECFS 2022, various initiatives have been recommended to reduce the risk of roadkill in the hotspot areas. Meanwhile, an amount of MYR 100,000.00 has been allocated by the Ministry of Finance (MoF) to the Johor State Government for installing street lights in locations at risk of roadkill, which was completed in 2022 on Jalan Kota Tinggi-Mersing.

Figure 33: Examples of signboard (A), streetlight (B) and billboards (C) installed in the main elephant crossing area

Warning signboards are erected at elephant crossing hotspot areas that road users need to pay attention to, especially at night, to avoid unwanted incidents



CHAPTER 02

Vision, Goal and Objectives

The routes elephants use in plantation areas are most suitable to be used as elephant corridors; which can be achieved through strategic cooperation with the stakeholder. The photo was taken at FELCRA Batu 16, Kluang, Johor, using a drone by PERHILITAN Johor on 8 December 2021

VISION

Wild elephants thrive across their current and recoverable range in Peninsular Malaysia while coexisting with people in ecologically functional landscapes

GOAL

Healthy elephant populations are sustainably managed and conserved with shared responsibility at all levels of community

2.1 Objective 1

Preservation and conservation of elephant corridors and habitats

Challenges :

Lack of initiative in creating corridors and inadequate consideration of elephant presence in developed areas.

Opportunities :

Habitat fragmentation caused by development projects and the conversion of elephant habitats to other land use is still occurring in Peninsular Malaysia. These have contributed to HEC in agricultural areas and resulted in elephants venturing into residential areas and nearby villages. Consequently, creating corridors to ensure elephants can move safely from one habitat patch to another should be considered. The corridors should be away from residential areas and village areas.

PIRECFS 2022 is an excellent example of how ecological linkages selection is made at the land use planning level and the recommendations that need to be considered to connect these fragmented habitats, even though not all elephant habitats are included. Based on PIRECFS 2022, 33 (85%) of 39 ecological networks have been identified, recording the existence of elephant populations. The research community should continue to identify additional elephant habitats for future planning.

The PERHILITAN has released a Guidance Document on Wildlife Impact Study for Environmental Impact Assessment (EIA) and a Guidance Document for the Preparation and Submission of a Wildlife Management Plan (WMP) in EIA (Figure 34) that project proponents can refer to before embarking on development projects in elephant habitat. The report is critical to ensure that the development projects do not significantly impact the elephant population and simultaneously minimise the potential occurrence of HEC.

The elephant corridor areas identified in forest reserves or oil palm plantations can be recognised as High Conservation Value Areas (HCVA). The IUCN recently recognised Other Effective Conservation Measures (OECM), which acknowledges land managed with long-term conservation purposes under communities or private sectors without the need to take over the area for gazette under the Government.

Food resources, social networks, mating opportunities and safety are factors influencing the elephant movement. Thus, the relevant agency can target the potential and suitable areas at the border of the primary habitat for elephant habitat enrichment programmes to attract the elephants to safe areas far from residential or villages. This programme could be conducted in collaboration with corporate bodies or plantation companies by giving a reasonable incentive or as part of corporate social responsibility (CSR). Meanwhile, safety measures and mitigation efforts can be strengthened in focal areas of elephant movement, for example, riparian areas or buffer zones in the agricultural fields.

Figure 34: Guidance Document on Wildlife Impact Study for Environmental Impact Assessment (EIA) and Guidance Document for Preparation and Submission of Wildlife Management Plan (WMP) in EIA published by PERHILITAN

STRATEGY 1.1: ELEPHANT CORRIDOR CONNECTIVITY WITH ELEPHANT HABITAT IDENTIFIED AND RESTORED

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 1.1.1 **Identify, assess, and validate corridor linkages between isolated elephant habitats.** **Implementation year** 2023 - 2030	PERHILITAN FDPM State Authority SFD	NRECC MOW MOT MPIC MAFS FDPM DLM PLANMalaysia PWD LMO SEPU DLO NGOs HLI GLC	a. Identify and propose a linkage of habitats that can be used as part of an elephant corridor. b. Plan and prepare an Elephant Management Action Plan at the State Level. c. Preparing Consideration Papers regarding the connectivity of elephant corridors up to the level of the National Land Council
Action 1.1.2 **Identify and propose forest landscapes that will be maintained or gazetted as elephant habitat.** **Implementation year** 2023 - 2030	NRECC FDPM SFD State Authority	PERHILITAN DLM PLANMalaysia SEPU DLO MPIC MAFS HLI GLC	a. Conduct consultation sessions with the State Authority to maintain and gazette the proposed elephant habitat. b. Increase the percentage of protected forest areas as wildlife habitat.

STRATEGY 1.1: ELEPHANT CORRIDOR CONNECTIVITY WITH ELEPHANT HABITAT IDENTIFIED AND RESTORED

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 1.1.3 **Collaboratively restore deteriorated or degraded elephant habitat** **Implementation year** 2023 - 2027	FRIM State Authority LMO DLO SFD	PERHILITAN FDPM DLM PLANMalaysia SEPU MPIC MAFS HLI GLC NGOs	a. Collect and analyse information on deteriorated or degraded elephant habitats. b. Habitat suitability studies and programmes to be carried out. c. Plan and cooperate with various parties to secure funds to enrich elephant food sources.
Action 1.1.4 **Protect and restore connectivity between habitat patches bisected by linear infrastructure development.** **Implementation year:** 2023-2030	NRECC MOW MOT	KKDW PERHILITAN PWD FDPM SFD DLM PLANMalaysia GLC	a. Identify existing linear infrastructures that act as barriers to elephant and wildlife movement. b. Assess and consider natural or manufactured means (overpass or underpass) to reconnect the fragmented habitat. Next, propose plans to the State Government and Ministry of Works. c. Ensure new linear transportation infrastructure includes a Wildlife Management Plan and measures to protect habitat connectivity.

STRATEGY 1.2: MONITORING AND PROMOTING THE IMPLEMENTATION OF LOW-IMPACT RESOURCE EXTRACTION ACTIVITIES

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 1.2.1 **Monitor and encourage low-impact resource extraction in elephant habitat** **Implementation year** 2023 – 2027	SFD DMGM LMO State Authority	PERHILITAN FDPM DLM PLANMalaysia SEPU DLO MPIC MAFS NGOs HLI GLC	a. Revise existing procedures by considering the overall impact on elephant habitat. b. Organising consultation sessions with stakeholders and related agencies. c. Provide recommendations for improvement on low-impact extraction methods.
Action 1.2.2 **Ensure all development activities that have an impact on elephant habitat execute the Wildlife Management Plan (WMP)** **Implementation year** 2023 – 2030	DOE Landowner State Government SFD DLO DID	PERHILITAN FDPM DLM PLANMalaysia DMGM LMO SEPU DLO MPIC MAFS KKDW NGOs HLI GLC	a. Prepare WMP in collaboration with the appointed consultants. b. Monitor the execution of the WMP by the Project Proponent /developer and relevant authorities. c. Recommend improvements to WMP implementation. d. Coordinate the preparation and implementation of the WMP in line with the Environmental Impact Assessment (EIA) report. e. Ensure development activities consider the hierarchy of avoid, mitigate, and restore and have in place measures to promote coexistence with elephants.

STRATEGY 1.2: MONITORING AND PROMOTING THE IMPLEMENTATION OF LOW-IMPACT RESOURCE EXTRACTION ACTIVITIES

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 1.2.3 **Creating an elephant corridor as a secure route in controlling the occurrence of HEC** **Implementation year** 2023 - 2030	SFD DLO HLI NGOs	PERHILITAN SEPU GLC Landowner	a. Establish Standard Operating Procedures (SOP) and Best Management Practice (BMP) Guidelines to establish and manage elephant corridors. b. Identify and evaluate the suitable location for the elephant corridor. c. Identify and obtain the consent of landowners to support the establishment of elephant corridors. d. Identify specific incentives for landowners who agree to cooperate. e. Identify methods of evaluating the effectiveness of elephant corridor provision. f. Have in place measures to promote coexistence with elephants.

2.2 Objective 2

Reducing the impact of human-elephant conflict and increasing the acceptance of coexistence

Challenges :

Habitat loss and fragmentation are continuing, which makes resolving HEC challenging. The lack of tolerance concerning the presence of elephants in the same landscape makes it difficult for the coexistence concept to be accepted by the community.

Opportunities :

Ongoing HEC requires more practical mitigation measures adapted according to the type of conflict, type of landscape, target groups, available financial resources, stakeholders' support trust and willingness to collaborate, and the type of human activities in the landscape. These mitigation efforts require the cooperation of all parties at various levels. The State Government's role as the authority responsible for planning development projects will need to ensure development plans include coexistence measures with the elephant population in the area. Every large-scale land use planning must consist of the PERHILITAN or related research organisations, including NGOs and universities, to give professional input concerning elephants' conservation in the areas involved.

Many elephant-based research studies are conducted, which policymakers can use as a source. The PERHILITAN or elephant-based research organisations, including NGOs and universities, can provide technical advice to reduce the impact of HEC. An organised mechanism is necessary to ensure that engagement in HEC issues is carried out professionally, responsibly, and transparently. The establishment of the State Elephant Conservation Action Committee (SECAC) chaired by the State Secretary Office, Deputy State Secretary Office, or relevant Executive Council (Exco) of the State Government is suggested.

A study on the suitability of a compensation scheme for crop damage caused by elephants is necessary to reduce the burden on the people involved. Additionally, a study to increase the tolerance of elephants can also be carried out, for plantation owners can engage with a suitable crop insurance protection scheme for their crops. The shrinking habitat of elephants is a concern and requires a cautious management strategy because it only gives a few options besides accepting the coexistence concept.

The need for the PERHILITAN staff to manage HEC in all states was given attention during the First Meeting of the National Biodiversity Council (MBN1) on 22 March 2023, chaired by the Honorable Deputy Prime Minister of Malaysia.

Coexistence between humans and elephants does not mean there is no conflict. Still, it needs to be seen as a challenge to reduce the impact of HEC and simultaneously increase the safety of people in the landscape, which requires comprehensive planning and willingness to collaborate between the agriculture sector and conservation projects (Wong et al., 2021). The Achieving of Coexistence with Elephants (ACE) project pioneered by MEME in the state of Johor is based on the concept of cooperation between plantation parties and related State Government agencies to manage HEC responsibly, increase safety for people in the landscape and provide elephant movement corridors as well as food bank areas for elephants. This project allows elephants to use forested areas and some parts of the plantation areas as corridors and roaming areas without compromising the safety of the workers. To date, the ACE Project has signed a Memorandum of Collaboration (MoC) with several large plantations like FELDA, FELDA Global Ventures Holdings Limited (FGV), IOI Plantation, Sime Darby Plantation and Aramijaya (Sim, 2022). The success of the ACE Project can be used as an example to be implemented in other states. The negative perception towards elephants is another challenge that needs to be overcome. Public awareness campaigns, especially through social media, must be intensified to increase public tolerance.

STRATEGY 2.1: REDUCING THE IMPACT OF ELEPHANT CONFLICT TO AN ACCEPTABLE LEVEL THAT ENCOURAGES THE CONCEPT OF COEXISTENCE

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 2.1.1 **Monitor and assess the impact of elephant conflicts, especially on:** a. socio-economic b. human dimension in HEC (people's perception and psychology) c. the leading causes of HEC. **Implementation year** 2023 - 2030	PERHILITAN NRECC NGOs HLI	FDPM JAKOA MOW PLANMalaysia EPU SEPU PBT MPOGCF Landowner	a. Conduct periodic studies and field monitoring. b. Evaluating HEC complaints received by the PERHILITAN and related agencies c. Strengthened the execution of the State Wildlife Conflict Management Committee Meeting d. Establish and manage the National Human-Wildlife Conflict Management Committee Meeting. e. Plan the strategy to implement the action according to the local suitability. f. Reassess and coordinate data collection methods for property damage, structures and crop destruction.
Action 2.1.2 **Provide guidance and technical advisory services on Best Management Practices (BMP) and training to the target group.** **Implementation year** 2023 - 2030	PERHILITAN MPIC NGOs HLI	NRECC PLANMalaysia Landowner PBT	a. Evaluate and analyse the effectiveness of HEC management practices carried out by stakeholders. b. Improve the current management practices based on BMP. c. Conduct Technical Committee Meetings on HEC Issues at the community level (self-regulated).
Action 2.1.3 **Enhance education initiatives and public awareness towards coexistence.** **Implementation year** 2023 - 2030	PERHILITAN NGOs HLI	MCMC MOE MOTAC MPOC NGOs JKKK CBO COAC	a. Evaluate the effectiveness of public awareness activities that have been implemented. b. Increase public awareness activities at various levels of society. c. Evaluate the implementation and compliance of the Malaysian Sustainable Palm Oil (MSPO) certifications set by the parties involved. d. Carrying out a pilot cooperation project between stakeholders towards executing the concept of coexistence.

STRATEGY 2.1: REDUCING THE IMPACT OF ELEPHANT CONFLICT TO AN ACCEPTABLE LEVEL THAT ENCOURAGES THE CONCEPT OF COEXISTENCE

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 2.1.4 **Enhance the HEC's management initiatives in Orang Asli villages located in elephant habitats.** **Implementation year** 2023 - 2027	JAKOA PERHILITAN NGOs	Lawmaker office SFD DLO HLI JSPC PSPC	a. Identifying the Orang Asli villages that were affected by HEC. b. Engagement session with the stakeholders involved. c. Produce specific guidelines for the management of HEC for communities living in elephant habitat.
Action 2.1.5 **Carry out a feasibility study to establish a compensation scheme and insurance on crops destroyed by elephants.** **Implementation year** 2023 - 2030	MPIC MAFS	PERHILITAN HLI NGOs JAKOA	a. Identify the evaluation mechanism and distribution of aid. b. Recommend standard application procedures and claim requirements. c. Identify contributors to the compensation funds.
Action 2.1.6 **Improve the ability of the PERHILITAN to carry out HEC management operations.** **Implementation year** 2023 - 2027	PERHILITAN	NRECC JPA MOF	a. Assess the effectiveness of the PERHILITAN's response to each complaint received b. Provide adequate tools and equipment for the operation to be carried out. c. Seek to hire more staff and secure enough funding for operations.

STRATEGY 2.2: INCREASING TOLERANCE OF ELEPHANT PRESENCE TO A LEVEL THAT SUPPORTS ELEPHANT HABITAT PRESERVATION

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 2.2.1 **Getting corroboration and implementation from agriculture and plantation sectors to have coexistence efforts with elephants** **Implementation year** 2023 - 2027	PERHILITAN MPOGCF MPIC NGOs	FDPM JAKOA MOW PLANMalaysia HLI EPU SEPU PBT Landowner	a. Stakeholder engagement in workshops. b. Assessment and monitoring HEC in the conflict area. c. Publishing of awareness materials. d. Publicity on social media. e. Engagement with certification bodies to support acknowledgement of plantations or agriculture products that are elephant-friendly.
Action 2.2.2. **Plantation and agriculture sectors to be empowered with their own elephant monitoring and research efforts** **Implementation year** 2023 - 2030	MPOGCF MPIC NGOs HLI	NRECC PERHILITAN FDPM JAKOA MOW PLANMalaysia EPU SEPU PBT Landowner	a. Plantations trained in research and monitoring methods can conduct their in-house training. b. Encourage the plantations to send elephant monitoring reports to PERHILITAN. c. Involve the plantations as active members of SECAC

2.3 Objective 3

Strengthening legislation and increasing the effectiveness of enforcement

Challenges :

The illegal killing of elephants and the illicit trade of elephant parts and products are still occurring in Peninsular Malaysia.

Opportunities :

Illegal elephant killing still occurs in Peninsular Malaysia for various reasons, and the PERHILITAN has carried out various enforcement programmes to curb this unlawful activity. However, this effort still needs to be reinforced. Accordingly, the enforcement program from multiple sectors still needs to be strengthened to curb this incident.

Multi-sectoral enforcement activities such as the Biodiversity Protection & Patrolling Programme (BP3), the Khazanah Integrated Operation (*Operasi Bersepadu Khazanah,* well-known as OBK), and the Monitoring the Illegal Killing of Elephant (MIKE) Programme enforcement patrols need to be continuously improved. With good collaboration among the enforcement agencies, they could regularly execute Road Blocking Operations (*Sekatan Jalan Raya,* well-known as SJR), particularly in hotspot areas around the MERs. Integrated operations and intelligence sharing with the RMP, the Royal Malaysian Customs Department (RMCD), Interpol and the RMP Wildlife Crime Bureau (WCB) still need to be continued. These operations are vital to prevent illegal firearms hunting and curb the illicit smuggling of wildlife, especially at the country's main entry points. Cooperation with enforcement agencies in neighbouring countries is essential to curb cross-border smuggling syndicates.

In December 2021, the amendment of Act 716 was approved by the Parliament after various revisions. However, due to the limited PERHILITAN workforce and for the effective implementation of enforcement operations, the PERHILITAN should extend their power to other enforcement agencies. In addition, the replacement and transfer of PERHILITAN personnel will affect directly or indirectly the enforcement operations, particularly on the ground force. Thus, ongoing training and courses related to enforcement, such as intelligence, raids, arrests, investigations, and prosecutions, will need to be continued. This training ensures that the staff's skills will continue to be assessed and improved.

Apart from the personnel aspect, the information collection system, applications and equipment to carry out tasks also must be considered. For instance, the existing system at INTAC PERHILITAN may need to be upgraded, and the database needs to be maintained. The role of stakeholders and funding agencies such as Hasanah Foundation, Malaysia Forest Foundation (MFF), MPOGCF and Sime Darby Foundation could also help the relevant enforcement agencies.

STRATEGY 3.1: EFFECTIVE LAW ENFORCEMENT CONDUCTED IN MANAGED ELEPHANT RANGES (MERs)

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 3.1.1 **Strengthen enforcement to prevent poaching and illegal killing of elephants.** **Implementation year** 2023 - 2030	PERHILITAN RMP	NGOs HLI Landowner DOA	a. Carry out SMART Patrolling and regular monitoring in hotspot areas with potential collaboration with plantations, NGOs and state agencies with enforcement teams. b. Continuing the CITES-MIKE Programme. c. Continuing monitoring and preparing reports for the Elephant Trade Information System (ETIS).
Action 3.1.2 **Strengthen enforcement to prevent smuggling activities** **Implementation year** 2023 - 2030	PERHILITAN RMP Interpol	FDPM RMCD JIM MAQIS NGOs	a. Planned, coordinated and conducted enforcement operations at the country's main entry points. b. Improve cooperation with relevant enforcement agencies. c. Plan and conduct the spot-check at the country's main entry points. d. Enhance the role of the Detection Dog Unit (K-9)

STRATEGY 3.2: STRENGTHENING OF LEGISLATION AND IMPROVING THE CAPACITY OF ENFORCEMENT MEMBERS

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 3.2.1 **Strengthen legislation to intensify protection for the Asian elephant.** **Implementation year** 2023 - 2030	PERHILITAN	AGC NRECC RMP NGOs	a. Revising and improving relevant Conservation Regulations, if necessary. b. Revising and improving the Director General's Standing Orders. c. Reviewing, coordinating and improving the enforcement of SOP.

STRATEGY 3.2: STRENGTHENING OF LEGISLATION AND IMPROVING THE CAPACITY OF ENFORCEMENT MEMBERS

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 3.2.2 **Empower the enforcement team by:** a. Evaluate and add staff b. Carry out continuous training c. Provide adequate equipment d. Prepare the latest SOP e. Provide adequate operating funds f. Develop a practical application system g. Developing an intelligence database **Implementation year** 2023 - 2030	PERHILITAN MOF JPA	NRECC FDPM PSPC JSPC NGOs HLI MFF MAMPU Corporate sector Embassy	a. Apply for additional staff. b. Plan and prepare an annual calendar of annual enforcement exercises. c. Identify and improve the ability of the trainer. d. Revising and updating existing training modules e. Apply for annual allocations to conduct the courses/ training planned. f. Enhance cooperation with the parties interested in organising the courses/training.

STRATEGY 3.3: INCREASING AWARENESS AND ENGAGEMENT OF LOCAL COMMUNITIES IN SUPPORTING ENFORCEMENT EFFORTS

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 3.3.1 **Encourage and improve enforcement initiatives at the local community level by:** a. Appointment of Community Rangers in MERs b. Community-Based Organisation (CBO) programme development **Implementation year** 2023 - 2030	NRECC PERHILITAN FDPM	KKDW VAD JAKOA SEPU NGOs HLI MOTAC PSPC JSPC	a. Identify the location of community priority that is suitable for the implementation. b. Identify and assess the required capacity. c. Provide appropriate courses/training. d. Considering the increase of staff/ Community Ranger's posts in the MERs area e. Coordinate the establishment and implementation of CBO in selected locations.

2.4 Objective 4

Increased knowledge of elephant behaviour, ecology and habitats

Challenges :

Lack of scientific-based information, shortage of human resources and inadequate funds to carry out research projects to cover Peninsular Malaysia.

Opportunities :

The elephant is a robust species and can adapt quickly to the changes in land use and human activities in its habitat. Increasing knowledge and scientific data collection is fundamental to helping the authorities manage Malaysia's Asian elephant population more sustainably and systematically. In addition, scientific efforts on monitoring elephant populations and assessing their responses towards changes in their habitat need to be continued. From 2007 to 2008, the PERHILITAN collaborated with WCS-Malaysia to conduct a dung count survey programme to assess the elephant population in the Taman Negara National Park and the Endau-Rompin National Park. Between 2019 and 2020, the DNA genotyping population assessment method was carried out in Ulu Muda FR and Taman Negara National Park. The PERHILITAN analysed data obtained from a camera trap study under the 1st National Tiger Survey (1st NTS) 2018-2020 to examine Peninsular Malaysia's elephant occupancy in forested areas. Previously, in 2015-2016, the MEME project examined elephant occupancy in human-dominated landscapes in Peninsular Malaysia.

To carry out a National Elephant Survey (NES) using a standardised and acceptable method suitable for scientific publication, PERHILITAN has estimated a budget of MYR20 million is required to conduct the fieldwork and laboratory analysis. Requests for allocations will be made under the Twelfth Malaysia Plan (MP-12) or by applying for research grants from funders. To facilitate the implementation of NES in the future, the cooperation of all parties, especially NGOs and research organisations such as WWF-Malaysia, WCS-Malaysia, PELINDUNG and MEME, will be essential.

Additionally, PERHILITAN has data from 85 wild elephants fitted with GPS collars between 2012 and 2021. The elephants were either translocated from conflict areas or are resident elephants. Researchers could use thousands of data points to study the movement ecology and behaviour of elephants and their responses towards land use changes. The MEME project from UNM and several other universities have published scientific papers related to this field of research.

The PERHILITAN and various parties, such as MEME and WCS, often conduct public awareness programmes and stakeholder engagement sessions to share information and findings from scientific studies. Information sharing encourages evidence-based management decisions by governmental agencies and private sectors.

STRATEGY 4.1: INCREASING KNOWLEDGE OF ELEPHANT POPULATION DYNAMICS AND BEHAVIOURAL RESPONSE TO ANTHROPOGENIC DISTURBANCES

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 4.1.1 **Strengthening the elephant population and distribution database by:** a. updating existing population and distribution data b. conduct the National Elephant Survey Programme (NES). **Implementation year** 2023 – 2027	PERHILITAN NGOs	MOF FDPM NRECC SFD PSPC JSPC HLI	a. Collect, coordinate and evaluate existing elephant population and distribution data. b. Identify and prepare standard protocols for ecology and molecular DNA for NES study. c. Prepare a proposal paper for the application of NES. d. Planned, monitored, and implemented NES according to the schedule. e. Analyse, prepare and publish the latest status of elephant population and distribution in Peninsular Malaysia.
Action 4.1.2 **Improve the monitoring of dynamic behaviour patterns of elephants due to:** a. land use change b. human activity c. degraded habitat. **Implementation year** 2023 - 2030	PERHILITAN HLI NGOs	PSPC JSPC Landowner Plantation companies Project Proponent	a. Collect, coordinate and analyse the elephant GPS collar data. b. Monitor and assess the recent HEC trends in the field. c. Continuing elephant GPS collaring project covering targeted areas. d. Developing the HEC complaint application. e. Carrying out elephant herd monitoring activities using drones.

STRATEGY 4.2: EFFECTIVE SHARING OF RESEARCH RESULTS AND MONITORING ACTIVITIES

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 4.2.1 **Promote effective communication between stakeholders by:** a) publish and disseminate data and reports b) evaluate the acceptance and views of the target group c) give practical and realistic feedback **Implementation year** 2023 - 2030	PERHILITAN HLI NGOs	NRECC PSPC JSPC	a. Spread information through social and mass media. b. Conduct an integrated public awareness programme with stakeholders. c. Organising engagement sessions at local levels. d. Develop standard public awareness programme modules. e. Conduct a Training of Trainers (ToT) programme for programme facilitators at the plantation/village community level.
Action 4.2.2 **Review current programmes and their impact and focus on adaptive and practical management.** **Implementation year** 2023 – 2030 Periodically every three years	PERHILITAN HLI	PSPC JSPC NGOs	a. Evaluating the effectiveness of current management methods in dealing with HEC issues. b. Organise workshops with stakeholders to improve the management methods used. c. Assess and receive feedback from the targeted group on the impact of the management strategies.

2.5 Objective 5

Governance of the management of elephants in captivity

Challenges :

To standardise SOPs for captive elephant management and to safeguard the welfare of elephants, keepers and the mahout

Opportunities :

Elephants in captivity need thorough and consistent care to protect their welfare and health from potential diseases or stress. Proper management is crucial, including maintaining a clean and safe environment for the keepers and mahouts. Furthermore, specialised keepers and mahouts training is essential to prevent untoward incidents, making it a prerequisite for permit approval.

Keeping elephants in captivity also requires effective dung management to avoid polluting the environment or displeasing visitors or the public. The operators could use the abundance of elephant dung to produce organic fertilisers or souvenirs (e.g. paper) like those made in other countries.

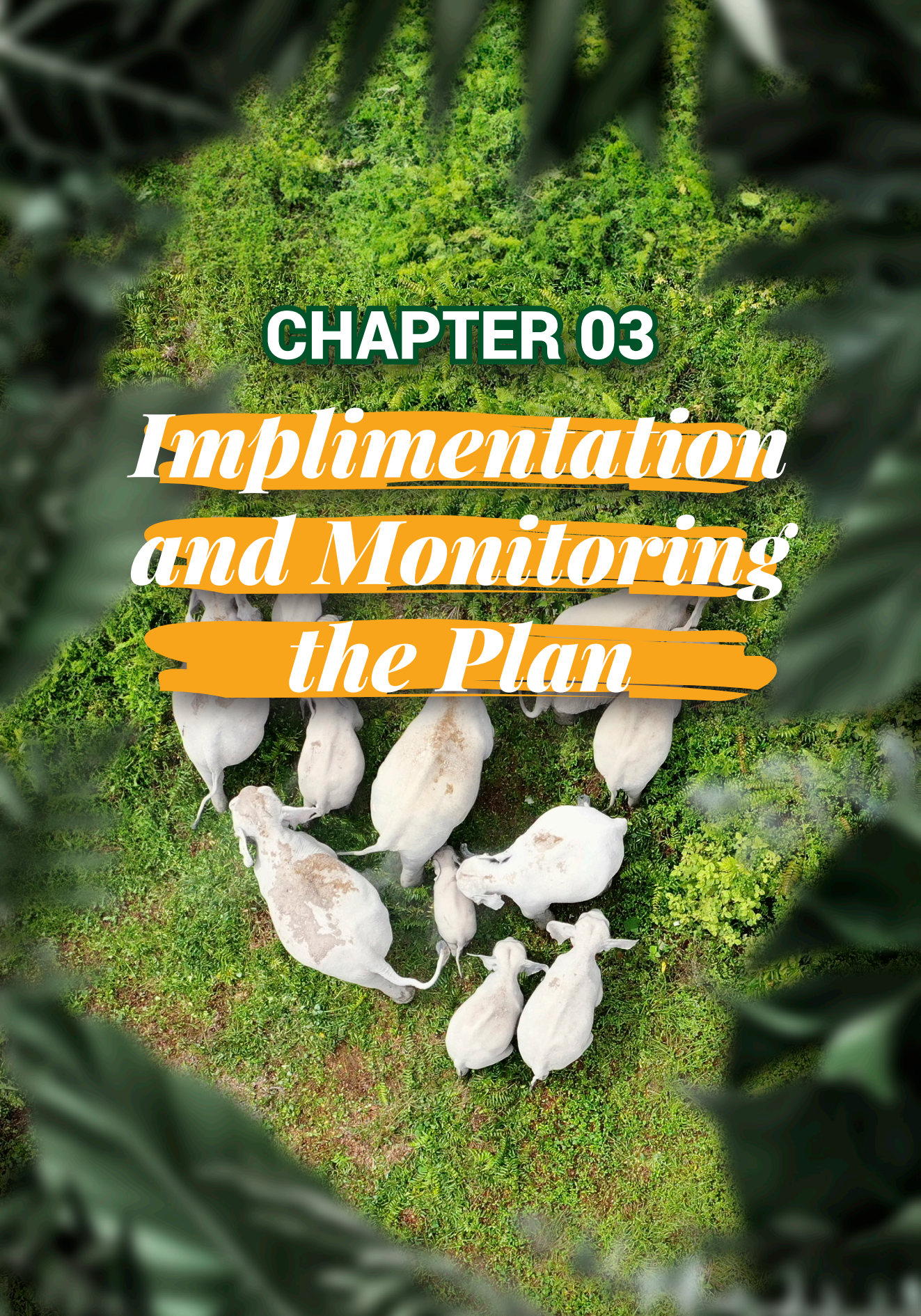
Each elephant will be micro-chipped to provide individual identification to comply with international regulations and abide by the Wildlife Conservation Regulations Act 716 rules. To ensure that all regulations are enforced and complied with, the PERHILITAN will conduct an annual audit where relevant operators will be given a reasonable time to fulfil the requirements, or the PERHILITAN could take the next course of action under applicable laws. Biosafety care will also ensure that elephants, keepers, or mahout are not exposed to zoonotic diseases such as tuberculosis (TB).

STRATEGY 5.1: IMPROVING GOVERNANCE AND MANAGEMENT OF ELEPHANTS IN CAPTIVITY

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 5.1.1 **Improve the registration system of elephants in captivity to be on par with international standards.** **Implementation year** 2023 - 2027	PERHILITAN	Zoos HLI NGOs PBT SEPU	a. Improving the marking system for elephants in captivity. b. Create and develop a Centralised Registration System for elephants in captivity (example: Big Data & Zoo Information Management System - ZIMS).
Action 5.1.2 **Establish Best Management Practice (BMP) Guidelines and Standard Operating Procedures (SOP) for Captive Elephant Management** **Implementation year** 2023 - 2027	PERHILITAN MAZPA	Zoos NGOs HLI	a. Determine individual elephant management methods based on age composition requirement (male, female, young) and elephant condition (normal or disabled). b. Determine the management method for elephants in musth situations. c. Identify the specific needs of elephant management facilities (e.g., cage facilities and quarantine enclosures). d. Determine the type of training required according to the age and sexuality of the elephant.
Action 5.1.3 **Identify the potential of technology and innovation to improve the governance of elephant management in captivity.** **Implementation year** 2023 - 2030	MAZPA Zoos	PERHILITAN MOSTI NGOs HLI	a. Attend and present papers at seminars, workshops or symposiums at the local or international level. b. Preparing Proposal Paper for Allocation Application.

STRATEGY 5.2: IMPROVING MAHOUT SKILLS AND ELEPHANT HUSBANDRY SYSTEM

Action	Lead Agency	Supporting Agencies	Implementation Initiatives
Action 5.2.1 **Improve the skills of mahouts and elephant keepers** **Implementation year** 2023 - 2027	PERHILITAN Zoos	MAZPA DSD	a. Improve cooperation and conduct consultation sessions with DSD. b. Acquiring certificate recognition from the relevant agency. c. Provide Mahout Certification Course and Elephant Keeper Certification Course. d. Incorporate the requirement to attend a course as a prerequisite for issuing a special permit.
Action 5.2.2 **Improve health monitoring and disease control capabilities on elephants and staff involved.** **Implementation year** 2023 - 2030	PERHILITAN Zoos	MAZPA DVS	a. Implement EEHV (elephant endotheliotropic herpesviruses) and TB monitoring programmes. b. Identify training needed for disease monitoring and treatment purposes
Action 5.2.3 **Ensuring husbandry is governed at its best** **Implementation year** 2023 - 2030	PERHILITAN Zoos	MAZPA DVS	a. Conduct regular annual audits. b. Ensure that the premises owner are given recommendations for improvement and to address serious concerns. c. Prepare the standard procedures/manuals for elephant management in captivity.



CHAPTER 03

Implimentation and Monitoring the Plan

3.1 Establishment of the Committee

To ensure the effective implementation and monitoring of NECAP 2.0, three levels of committees should be established, namely:

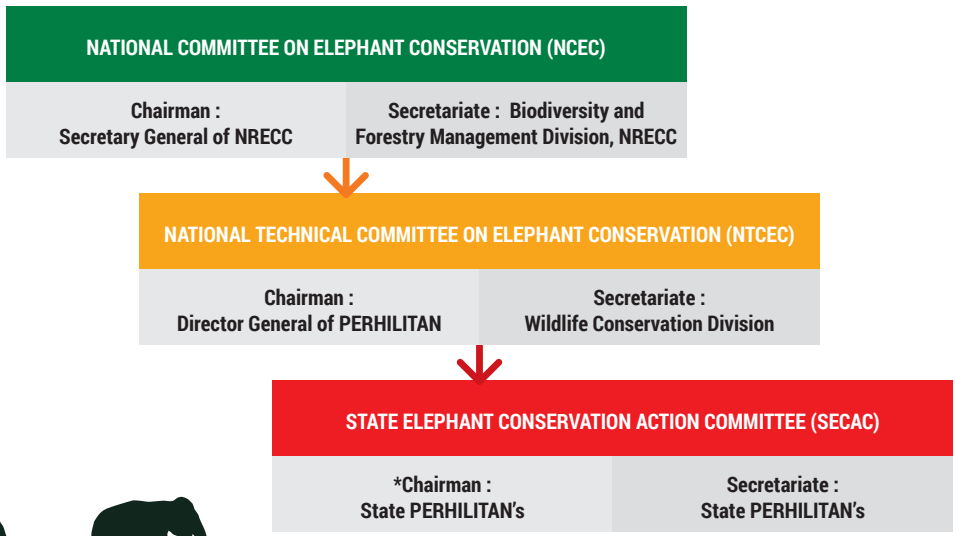
i. State Elephant Conservation Action Committee (SECAC)
ii. National Technical Committee on Elephant Conservation (NTCEC)
iii. National Committee on Elephant Conservation (NCEC)

Each level will perform a specific function as detailed below:

SECAC	NTCEC	NCEC
• Discuss the status of elephant management at the district level • Coordinate and implement HEC management mitigation actions at district and state levels • Coordinating elephant conservation action plans between agencies at the district/state level • Preparing reports on elephant conservation actions at the state level • Collect, record, and analyse the data on elephant conservation actions, including from other state-level agencies involved	• Discuss the status of elephant management at the state level • Monitor and coordinate HEC management mitigation actions in each state • Coordinating action plans for elephant conservation and establishing cooperation between inter-agencies at the State Government level • Prepare reports and consideration papers related to elephant conservation actions in Peninsular Malaysia for consideration by NCEC	• Discuss elephant conservation issues and develop an intervention plan, especially involving the management of HEC throughout Peninsular Malaysia. • Formulate the policies related to elephant conservation efforts • Coordinate and collaborate between Ministries, State Governments, Departments, agencies and NGOs in elephant conservation efforts in Peninsular Malaysia

3.2 Committee Secretariat

To facilitate the meeting of the established committees, several secretariats need to be appointed, namely:



3.3 Committee Membership

The membership of the established committees is differentiated to represent each level. The recommendations of the committee members are as follows:

National Committee on Elephant Conservation (NCEC)

Chairman: Secretary General of NRECC	Alternate Chairman: Deputy Secretary General (Natural Resources)	Secretariate: Biodiversity and Forestry Management Division, NRECC
Director General of the Department of Wildlife and National Parks (PERHILITAN) Peninsular Malaysia	Director General of Forestry Department of Peninsular Malaysia (FDPM)	Representative of the Ministry of Plantation Industries and Commodities (MPIC)
Representative of PLANMalaysia	Representative of the Ministry of Agriculture and Food Security (KPKM)	Representative of the Ministry of Rural and Regional Development (KKDW)
Representative of the Department of Orang Asli Development (JAKOA)	Representative of the Ministry of Works (KKR)	Director of Wildlife Conservation Division, PERHILITAN
Director of Enforcement Division, PERHILITAN	Director of Ex-situ Conservation Division, PERHILITAN	Representative of Department of Director General of Land and Mines (JKPTG)
Representative of Public Service Department (JPA) – by invitation	Representative of the Ministry of Finance (MoF) – by invitation	Representative of the Ministry of Economy - by invitation

*NCEC meetings can be held simultaneously with other main meetings that discuss the same issue such as the National Biodiversity Council (NBC), the Meeting of Environment Ministers and Members of the Environmental Ministers and State Excos Responsible for the Environment (MEXCOE) and National Steering Committee (NSC) Meeting for National Policy for Biological Diversity (NPBD)

National Technical Committee on Elephant Conservation (NTCEC)

Chairman: Director General of PERHILITAN	Alternate Chairman: Deputy Director General (Conservation) of PERHILITAN	Secretariate: Wildlife Conservation Division, PERHILITAN
State Director of PERHILITAN	Representative of Biodiversity and Forestry Management Division, NRECC	Representative of Forestry Department of Peninsular Malaysia (FDPM)
Representative of Department of Orang Asli Development (JAKOA) Headquarters	Representative of PLANMalaysia	Head of National Elephant Conservation Centre (NECC)
Representative of Public Works Department (JKR) Headquarters	Representative of Department of Agriculture (DoA)	Representative of the Department Director General of Lands and Mines (JKPTG) – by invitation

State Elephant Conservation Action Committee (SECAC)

Chairman: *State Director of PERHILITAN's		Secretariate: State PERHILITAN
Head of PERHILITAN District Office	Representative of State Secretary Office or State Economic Planning Division (BPEN)	Representative of District and Land Office
Representative of State Department of Orang Asli Development (JAKOA)	Land development agencies (e.g., KESEDAR, KETENGAH, Yayasan Pahang, etc.)	Chief (Penghulu)
Representative of the Department of Agriculture (DoA)	Representative of State PLANMalaysia Office	Representative of Member of Assemblymen (ADUN)/Member of Parliament (MP)
Representative of NGO's or research related organisation – by invitation		

Small Notes

*Since the issue of elephant conservation mainly involves HEC issues, it is recommended that the SECAC meeting be chaired by the State Government, i.e. either by the State Secretary Office or Deputy State Secretary Office or related State Government Executive Council (EXCO).

**It is recommended that the Head of the PERHILITAN District Office and HEC be invited as a permanent representative to the District Action Committee (JKTD) meeting, which the District Officer chairs. This will ensure that the agenda for solving the HEC issues can be emphasised.

3.4 Terms of Reference (ToR)

The ToR need to be established to ensure the Committee's meeting goes according to the purpose of its establishment. Some suggestions for ToR to be considered are as follows:

SECAC	NTCEC	NCEC
• Meetings are held at least twice a year or as needed • The meeting must be held before the NTCEC Meeting convenes **Meeting agenda** • Presentation of the status of the HEC management actions in each district • Presentation of elephant conservation programme/projects carried out in the state • Discussion and resolution of specific issues related to HEC in the district/ state	• Meetings are held at least twice a year or as needed • The meeting is conducted during the PERHILITAN Scheduled Meeting **Meeting agenda** • Presentation of the status of NECAP 2.0 execution by each state • Discussion and resolution of specific issues related to HEC management in the state • Presentation of Proposal Papers for meeting recommendations and support	• Meetings are held at least once a year **Meeting agenda** • Presentation of the overview status of the implementation of NECAP 2.0 • Presentation related Proposal Papers

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A herd of elephants was recorded using a camera trap at Mendrat Saltlick, Brok Forest Reserve, Gua Musang, Kelantan, on 28 February 2020 by PELINDUNG during the 1st National Tiger Survey

NATIONAL ELEPHANT CONSERVATION ACTION PLAN (2023-2030)

NECAP 2.0

e ISBN 978-967-5557-54-5

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