

# Malaysian Nature Society

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## Mission Statement

**To promote the study, appreciation, conservation and protection of Malaysia's natural heritage, focusing on biological diversity and sustainable development.**

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**MNS is a partner of BirdLife International, IUCN and FSC**



# Table of Contents

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<b>Executive Summary</b>	iv
<b>1. Introduction</b>	
1.1 What are Forests?	1
1.2 The Importance of our Forest Resource	1
1.3 Forestry in Malaysia	2
1.3.1 Forestry-related Legislation	2
1.3.2 Classification of Forests in Malaysia	3
<b>2. The Malaysian Nature Society (MNS)</b>	
2.1 Mission	6
2.2 Malaysian Nature Society Strategic Plan 2000	6
2.3 Rationale and Justification for an MNS Forest Policy and Strategic Plan	8
<b>3. Policy And Strategic Plan For The Conservation And Sustainable Use Of Forests In Malaysia</b>	
3.1 Core Objectives	9
3.2 Guiding Principles	9
3.3 Strategies	10
Strategy 1: Ensuring Effective Forest Conservation Policies and Practice in Malaysia	10
Strategy 2: Managing Forests in a Sustainable Manner	15
Strategy 3: Involving the Malaysian People in Forest Management	16
Strategy 4: Integrating the Conservation and Sustainable Utilisation of Forests into National, State and Local Planning and Decision-making	17
Strategy 5: Ensuring a Sound Scientific and Technological Basis for Policy and Management	18
Strategy 6: Promoting Compliance with International Commitments	20
Strategy 7: Ensuring Protection of Representative Forest Types	20
<b>4. References</b>	24

# **Executive Summary**

This Forest Policy and Strategic Plan ("the plan") has been prepared in line with the mission statement of the Malaysian Nature Society ("MNS" or "the Society"): "To promote the study, appreciation, conservation and protection of Malaysia's Natural Heritage, focusing on biological diversity and sustainable development."

The plan allows all MNS Branches to play a larger role in aiding MNS' advocacy work.

It also enables other agencies such as government departments and non-governmental organisations to understand the Society's stand on forest conservation and sustainable management.

The policy statements herein are meant to highlight issues that MNS sees as important to the overall conservation and sustainable management of Malaysia's forests.

As Malaysia's forests are under the jurisdiction of various government agencies, MNS emphasises the importance of cooperation between agencies.

MNS sees the need for an integrated management action plan for forests, involving all agencies and for all types of forests.

Within the overall mission of MNS, seven core objectives have been defined, to advocate, initiate and assist in activities that contribute to the wise use and effective management of Malaysian forests.

Eight guiding principles have been adopted, which form the framework within which this plan is written.

Seven strategies have been formulated through which the core objectives of this plan can be achieved.

Fifty actions have been identified as priorities for MNS to advocate, participate in or undertake. These actions will involve developing programmes, forging partnerships and taking conservation advocacy a step further.

# 1. Introduction

## 1.1 WHAT ARE FORESTS?

There are a wide range of forest types in Malaysia, including wetland forests, mixed dipterocarp forest, forests over limestone, heath forests, montane oak forest and montane ericaceous forest.

Wetland forests in Malaysia comprise three main habitat types: mangrove forests, peat swamp forests and freshwater swamp forests. Dipterocarp forests are tall forests growing on well-drained soils of the plains and foothills and form one of the richest and most diverse biological communities in the world. Limestone hill ecosystems are areas of high endemism with many species being locally restricted. Heath forests occur over nutrient-deficient soils, and montane forests occur from about 1000m to about 2000m above sea level.

Each of these forest ecosystems is unique in its composition of plants and animals that interact with, and are dependant upon each other. Soil composition and nutrient levels play a part in plant diversity. Forests are not only composed of trees; they are complex systems with a range of other kinds of plants, such as epiphytes, strangling plants, climbers, parasites and fungi. Within forests live a large variety of vertebrate and invertebrate species. Complex interrelationships exist between plants and animals. Many plants are dependent on animals for the dispersal of seeds and for pollination. Animals are dependent on plants for shelter and as a source of food. This whole community makes up the forest ecosystem.

## 1.2 THE IMPORTANCE OF OUR FOREST RESOURCE

The geographical extent of Malaysia, covering the Malay Peninsula and Borneo, constitutes two of the richest territories in Sundaland. Borneo, the richest island in western Malesia, is approached in overall species diversity only by the Malay Peninsula (Wong, 1998). The size of Borneo's flora is believed to range between 9,000 and 15,000 species of vascular plants (Wong, 1998). 108 tree species, just over a third of the 311 recorded, belonging to 31 families (Soepadmo and Wong, 1995) are endemic to the island, with only two not recorded for Sabah and Sarawak.

It is estimated the Malayan flora comprises just over 8,000 species of seed plants in about 1,500 genera, showing a much closer relationship with Borneo than with Sumatra. Of the 2,830 tree species enumerated in a revision of the Peninsula's tree flora, 746 (26%) are endemic (Ng et.al., 1990).

Harvesting forest products such as timber is an important economic activity in Malaysia and has a direct impact on the socio-economic development of the country. Of the 5,000 species of trees, about 400 species are harvested for their timber (Soepadmo, 1998). Malaysia is one of the leading exporters of tropical timber. In 1997, the forestry sector earned RM 13.88 billion from the export of forest products (Kumaran, 1998).

## 1.3 FORESTRY IN MALAYSIA

In Malaysia, individual states have complete jurisdiction over forestry matters. To ensure a common approach to forestry issues, the National Forestry Council (NFC) was set up under the National Land Council in 1971. The NFC was to be a forum where state and federal governments could discuss forestry issues. The NFC endorsed the National Forestry Policy (NFP) in 1978 (Yap, 1995). The NFP objectives are to 'conserve and manage the nation's forest based on the principles of sustainable management' and 'to protect the environment as well as to conserve biological diversity, genetic resources and to enhance research and education (Department of Forestry, Malaysia, 1978).

### 1.3.1 Forestry-related legislation

Recognising the importance of forests, the NFC facilitates the adoption of a coordinated plan to sustainably manage and utilise Malaysia's forests. The Forest Enactment and Rules enacted by the Federated and Unfederated Malay States in the early thirties was replaced by the National Forestry Act 1984 (Department of Forestry, Malaysia, 1984).

The Wildlife Act 1984 provides for areas set aside for the protection of wildlife and national parks. The Act also has a list of totally protected and protected species of animals that fall under the jurisdiction of the Department of Wildlife and National Parks (DWNP) (MOSTE, unpublished).

In 1997, Malaysia published its National Policy on Biological Diversity (MOSTE, 1997). This Policy deals with the conservation and sustainable utilisation of Malaysia's biological diversity.

Almost all States have gazetted forested land as Permanent Forest Estate (PFE). As forestry also comes under each State's jurisdiction in Peninsular Malaysia, a State may choose to degazette certain areas for other forms of development (MOSTE, unpublished).

Within Peninsular Malaysia individual departments have their own objectives and planning programmes, which rarely take into consideration the plans of other departments also involved in similar areas. This leads to conflicts.

Sabah's and Sarawak's forest policies have similar objectives to Peninsular Malaysia's NFP.

In Sabah, the Forest Enactment 1968 is the principal forestry law. The Enactment provides for the use and management of forest reserves and the harvesting of forest produce from 'Stateland', which is land under State Government jurisdiction, and is not a forest reserve (Sabah Forestry Department, 1999).

However, forest management in the Enactment consists mainly of prohibitions against conducting most activities without authorisation. Provisions for the purposes of management, planning and inventory are not included. The Enactment has also been amended frequently (MOSTE, unpublished).

Besides this, the Sabah Biodiversity Centre was established.

In 1954, Sarawak adopted a Forest Policy, which provides the main guidelines for forest management. The Forest Ordinance 1954 deals with the 'establishment and management of Permanent Forest Estate and to regulate the harvesting of forest produce.' The National Parks and Nature Reserves Ordinance 1958 was adopted to provide for the 'formation, maintenance and control of national parks.'

The National Parks and Nature Reserves Ordinance 1998, which repealed the 1958 Ordinance, provides for 'for the constitution and management of National Parks and Nature Reserves and all matters incidental thereto.'

The Wildlife Ordinance 1958 provided for the 'establishment of Wildlife Sanctuaries and the protection of wildlife' (Forest Department of Sarawak, 1999). The Wild Life Protection Ordinance 1998 which repealed the 1958 Ordinance, gives more comprehensive provisions for the protection of wild life and the establishment of Wildlife Sanctuaries (MOSTE, unpublished).

The Sarawak Biodiversity Centre Ordinance 1997 and the Sarawak Biodiversity (Access, Collection and Research) Regulations 1998 are two laws that have been enacted by the State to achieve the twin aims of protecting Sarawak's biodiversity and recognising its importance. Under the Regulations, anyone wanting to access, collect, research or use the biological resources of the State is required to apply to the Sarawak Biodiversity Centre for a permit.

### 1.3.2 Classification of forests in Malaysia

Forests are managed under broad categories of Permanent Forest Estate (PFE), Stateland Forest (SLF) and Totally Protected Area (TPA). PFEs are maintained permanently for economic, protection, recreational and/or other purposes. Stateland Forests are considered to be areas for development, while Totally Protected Areas are areas set aside for nature conservation purposes. In Sarawak, Stateland Forests also include water catchment reserves (Wildlife Conservation Society & Sarawak Forestry Department, 1996).

PFEs are further subdivided into Protection Forest that will maintain climatic conditions, safeguard water resources, soil fertility, and the conservation of biological diversity, and Production Forest, which may be used for agricultural, domestic, industrial purposes and in the production of timber (Hj Abdul Rashid Mat Amin, 1996). (Table 1)

Table 1: Permanent Forest Estate in Malaysia by region (million ha) for 2001 & 2002

REGION	PROTECTIVE		PRODUCTIVE		TOTAL	
	2001	2002	2001	2002	2001	2002
<b>Peninsular Malaysia</b>	<b>1.90</b>	<b>1.90</b>	<b>2.95</b>	<b>2.95</b>	<b>4.85</b>	<b>4.85</b>
<b>Sarawak</b>	<b>1.00</b>	<b>1.35 (+35%)</b>	<b>5.00</b>	<b>4.64 (-7%)</b>	<b>6.00</b>	<b>5.99</b>
<b>Sabah</b>	<b>0.91</b>	<b>0.59 (-35%)</b>	<b>2.69</b>	<b>3.01 (+12%)</b>	<b>3.60</b>	<b>3.60</b>
<b>Total</b>	<b>3.81</b>	<b>3.84</b>	<b>10.60</b>	<b>10.60</b>	<b>14.45</b>	<b>14.44</b>

Table 2: Classification of PFE in Malaysia

PENINSULAR MALAYSIA	SABAH	SARAWAK
1. Timber Production Forest under Sustained Yield	1. Class I -Protection Forest Reserve	1. Forest Reserves
2. Soil Protection Forest	2. Class II -Commercial Forest Reserve	2. Protected Forests
3. Soil Reclamation Forest	3. Class III -Domestic Forest Reserve	3. Communal Forests
4. Flood Control Forest	4. Class IV -Amenity Forest Reserve	
5. Water Catchment Forest	5. Class V -Mangrove Forest Reserve	
6. Forest Sanctuary for Wildlife	6. Class VI -Virgin Jungle Reserve	
7. Virgin Jungle Reserved Forest	7. Class VII -Wildlife Reserve	
8. Amenity Forest		
9. Education Forest		
10. Research Forests		

Most States have not gazetted all their PFEs under these classifications and are still in the process of determining the legal and management guidelines for these classes. The exceptions to this are Virgin Jungle Reserves (VJR), which were established much earlier.

Most VJRs are in existing PFEs and are supposed to serve as permanent nature reserves, seed banks and as sources of genetic material. A total of 72 VJRs, covering 22,325 hectares has been established throughout Peninsular Malaysia, while in Sabah there are 50 VJRs covering 90,422 hectares (Hj Abdul Rashid Mat Amin, 1996). In Sarawak, no forests have been classified as VJRs.

Most VJRs are however, too small to sustain viable populations of rare, low-density flora and fauna to re-seed the rest of the PFE. Many VJRs are also located at the edge of the forests, making them susceptible to 'edge effects' such as wind drying and weed colonisation. They are also poorly placed for genetic exchange with the remaining forest (MOSTE, unpublished).

Totally Protected Areas (TPAs) serve to conserve biological diversity and act as centres for recreation, education and research. TPAs comprise National Parks, State Parks, Wildlife Reserves and Sanctuaries. Wildlife Reserves and Sanctuaries are managed by the Forest Department in Sarawak and by the Department of National Parks and Wildlife in Peninsular Malaysia and Sabah.

The National Parks of Taman Negara, Endau Rompin and the Krau Game Reserve make up 78% (6.03 million ha) of the protected areas in Peninsular Malaysia. There are 41 protected terrestrial (non-marine) areas (DWNP, EPU & DANCED, 1996). However, the Forestry and Wildlife Departments do not agree on the percentage allocated to each site,

as some wildlife reserves overlap with the forest reserves or PFE and therefore could be logged.

About 3.68 million ha of forest in Sabah have legal protection under the various categories named in Table 2 (MOSTE, unpublished). Classes I, VI and VII are of significance for biodiversity conservation. Unfortunately, the Forest Enactment 1968 (Sabah) does not mention this function for any class of forest reserve. Nor does the Enactment provide protection to animals. It provides some habitat protection and limited protection to plants (MOSTE, unpublished).

In Sarawak, both Forest Reserves and Protected Forests aim to provide long-term sustainable production of timber. However, while access to Forest Reserves is limited only to people with legal access, access to Protected Forests is almost unlimited as the Forest Ordinance states "any inhabitant of Sarawak may, without license or permit, cut and remove from Stateland which is not a forest reserve any timber or other forest produce required by him exclusively for his own domestic use and not for sale, barter or profit". Communal Forests aim to provide forest produce including timber, for domestic use by particular communities who would manage the resources sustainably (Wildlife Conservation Society & Sarawak Forestry Department, 1996).

## **2.The Malaysian Nature Society (MNS)**

Established in 1940, the Malaysian Nature Society is the oldest scientific non-governmental organisation in Malaysia dedicated to the appreciation and conservation of nature. MNS is a membership-based organisation, run by elected members on a voluntary, non-profit basis. Society members play an active, integral role in its nature conservation activities.

Today, MNS has over 5,000 members and a full-time staff strength of 30. MNS' role and contribution to conservation efforts in Malaysia is recognised by the government; the Society is called upon to participate in EIA review panels, to present NGO views in various fora and to sit on committees convened by government departments or ministries. In addition, MNS receives requests to participate in exhibitions, to give demonstrations on recycling or to give talks at seminars, meetings and conferences. There is however, no formal role for MNS to participate in these activities; the Society's views may or may not be taken into account.

### **2.1 MNS MISSION AND VISION**

**Mission:** To promote the study, appreciation, conservation and protection of Malaysia's natural heritage focusing on Biological Diversity and Sustainable Development.

**Vision:** To achieve a formal role and recognition as the principal nature conservation society in Malaysia.

### **2.2 MALAYSIAN NATURE SOCIETY STRATEGIC PLAN 2000 (MNS 2000)**

The current MNS Strategic Plan ("MNS 2000") provides the Society with its direction for a 5-year period (2000-2004). Four key focus areas have been defined: Conservation, Nature Parks, Environmental Education and Publications.

With the rapid rate of progress and development in the country, symptoms of nature and environmental degradation appear. MNS 2000 was formulated so that the Society can be positioned to address and respond to these challenges effectively, drawing on its expertise in nature conservation and proven commitment to the conservation and management of Malaysia's natural heritage.

This Forest Policy and Strategic Plan has been developed in line with priority activities in the MNS 2000 document, and in response to the objectives defined in Malaysia's National Policy on Biological Diversity (see box).

## **Excerpt from the National Policy on Biological Diversity, Malaysia (MOSTE, 1997):**

### Policy Statement

To conserve Malaysia's biological diversity and to ensure that its components are utilised in a sustainable manner for the continued progress and socio-economic development of the nation.

### Objectives

1. To optimise economic benefits from sustainable utilisation of the components of biological diversity;
2. To ensure long-term food security for the nation;
3. To maintain and improve environmental stability for proper functioning of ecological systems;
4. To ensure preservation of the unique biological heritage of the nation for the benefit of present and future generations;
5. To enhance scientific and technological knowledge, and education, social, cultural and aesthetic values of biological diversity;
6. To emphasise biosafety considerations in the development and application of biotechnology.

## **2.3 RATIONALE AND JUSTIFICATION FOR MNS FOREST POLICY AND STRATEGIC PLAN**

The Malaysian Nature Society promotes biodiversity conservation, habitat conservation and the sustainable management and development of Malaysia's natural resources. This includes the protection and conservation of important biodiversity areas as well as the sustainable utilisation of natural resources.

This Forest Policy and Strategic Plan will enable MNS to plan the way forward, direct its resources in an efficient, coherent and pragmatic fashion and most importantly, enable all its representatives and branches in Malaysia to understand and present the Society's views on forests to government, non-government and other concerned parties. The Society would also be able to use this document in its advocacy work with other relevant agencies and organisations.

This Forest Policy and Strategic Plan is meant to:

1. Complement the provisions contained within the MNS Strategic Plan 2000-2004;
2. Work within the framework of existing national policies and legislation;
3. Promote implementation of sustainable management practices in Malaysia's forests;
4. Promote conservation of Malaysia's forest resources; and
5. Provide MNS with a clear position on forests and forestry issues and be presented to various governments and organisations as part of MNS' advocacy efforts.

The Policy statements contained in this document evolved from issues that MNS sees as important to the overall conservation and sustainable management of Malaysia's forests. The statements emphasise the importance of gazetting forest areas officially under specific categories and the importance of maintaining the status of these areas.

Because Malaysia's forests are under the jurisdiction of various government agencies, MNS also emphasises the importance of cooperation between the agencies. MNS sees the need to work towards an integrated management policy and action plan for forests involving all agencies and for all types of forests. With an integrated management action plan, which promotes cooperation and understanding between government, NGOs and other organisations, sustainable management of forests can be achieved.

The actions recommended in this document are designed to be undertaken in the period until 2010. In 2006, the Society will undertake a review of the implementation of the strategic plan, followed by a final review at the end of the plan period in 2010. While the guiding principles of the policy remain enshrined, the policy itself will be subject to review in 2010. Based on the final review, the strategic plan will be re-formulated to reflect the new priorities and steps required to maintain the Society's effectiveness in its advocacy and conservation efforts.

## **3. Policy And Strategic Plan For the Conservation And Sustainable Use Of Forests In Malaysia**

### **3.1 CORE OBJECTIVES**

Within the overall mission of MNS, the core objectives of this policy and strategic plan are to advocate, initiate and assist in activities which contribute to:

1. The conservation of Malaysia's forests particularly through the promotion of their ecological, cultural, economic and social values;
2. The management of forests in an ecologically sustainable way and within a comprehensive protected areas framework;
3. Achieving informed community participation in the management of forests through appropriate mechanisms;
4. Raising community awareness of the values, benefits and range of forests;
5. The development of a shared vision between all spheres of community and promote the application of best practices in relation to forest management and conservation;
6. The application of sound scientific and technological approaches as a basis for the conservation, rehabilitation and ecologically sustainable development of forests; and
7. Meeting Malaysia's commitments as a signatory to relevant international treaties in relation to the management of forests.

### **3.2 GUIDING PRINCIPLES**

Forests form an integral part of the Malaysian environment, and their preservation and management is critical for the maintenance of Malaysia's rich biological diversity and a high quality of life for all citizens. Conservation of forests is a vital component of the economic and social development of the country.

In pursuing the mission of the Society and the core objectives of this Policy and Strategic Plan, MNS has adopted the following guiding principles:

1. Forests are a national treasure, and the entire representation of its diverse ecological and biological nature should be preserved for posterity as part of Malaysia's natural heritage.
2. The continued existence of pristine natural forests is important for the wellbeing of Malaysian society as well as its rich and diverse animal and plant life.
3. Forests and wildlife are inseparable entities contained within a single, diverse ecosystem, and management of both should be conducted concurrently.

4. Local communities form part of forest ecosystems; their role in managing forest resources and their rights to use forests, should be recognised.
5. Wise management of forests, their resources and functions is dependent upon sound scientific and technological knowledge.
6. The task of conserving and managing our forests is the responsibility of both the government and the Malaysian public.
7. Public awareness and education is a key factor in generating appreciation amongst all Malaysians of the values and benefits of forests, and the need to conserve and manage forests in a sustainable manner.
8. Conservation and management of forests in Malaysia should be conducted in line with international efforts to preserve global biological diversity, and necessitates active participation in international initiatives.

### **3.3 STRATEGIES**

The MNS Forest Policy and Strategic Plan has seven strategies to provide for the conservation and sustainable use of forests in Malaysia. These strategies are designed to work in concert with other ongoing initiatives for forest conservation and management. All are considered equally important to the success of this Policy and Strategic Plan.

The measures (Actions) indicated under each are not considered exhaustive but they are believed to be the highest priorities. These actions are meant to be undertaken by MNS, accepting that the Society is limited in its scope and reach in some areas, and that forging partnerships is vitally important towards achieving these strategies.

#### **Strategy 1: Ensuring Effective Forest Conservation Policies and Practice in Malaysia**

Policies relating to the use and conservation of forests in Malaysia are based on national and state laws. In order that coherent policies are developed at various levels, laws need to be reviewed, and amendments initiated as necessary.

There is also a need to review the implementation of state and national policies for all States, especially in relation to the link between forest laws and the protected areas system and the conservation of biological diversity (genetics, species and habitat). Policies relating to the conservation and utilisation of natural forests should address all relevant issues, and not focus only on timber production.

A national policy on forests was prepared in 1987, but its implementation has been lacking. This policy should be reviewed and revised to reflect changes and current priorities. MNS should play an active role in advocating a review of this national policy on forests, and recommend appropriate amendments, as necessary.

The amended national policy on forests should be adopted by all states in Malaysia. MNS recognises that each state, in adopting the national policy, will have to adapt its implementation to reflect the unique situation within their territory, and that implementation of forest policies at State level is the right and responsibility of each State.

## **CONSERVATION OF RIPARIAN FOREST**

Riparian forests represent an ecologically rich part of natural forested landscapes, and should be recognised as such. Species are not distributed evenly within an area of forest, and riparian forests form one of the richest parts of the forest ecosystem. Riparian forests are critically important to the ecology of streams, and should be preserved to ensure stream health. Existing practices regarding the designation and protection of riparian reserves are ineffective, and have contributed to negative impacts on stream health. These practices should be reviewed and appropriate guidelines formulated and enforced to ensure the integrity of riparian reserves.

## **CONVERSION OF NATURAL FOREST TO OTHER USES**

Over the past twenty years, the extent of natural forest in Malaysia has been drastically reduced, both in size and in quality. Despite the fact that large areas of non-forested land exist, natural forests continue to be cleared for development. All areas of remaining pristine natural forest should be afforded legislative protection, and excluded from development.

## **FOREST PLANTATIONS**

Planting of commercial species is perhaps an approach that will relieve pressure on natural forests in the future, and this strategy is being advocated in Malaysia. However, plantation forests should only be located on very degraded natural forests or on non-forested lands, and no high quality and pristine natural forests should be cleared for such plantations. Fast growing species are preferred for forest plantations, and often, exotic species are the most suitable. The ecological impacts of the use of such species, and the location and extent of plantations must be determined before such projects are approved.

## **HUNTING**

Hunting is as large a contributor to forest degradation as clearance. Wildlife is an integral part of forest ecosystems, and a forest without wildlife is a dead forest, with plant communities deprived of pollinators of their flowers and dispersers of their seeds.

The dependence on wild protein is virtually non-existent in Malaysia today, and hunting is merely a sport. Amongst forest-dwelling communities, hunting is cultural, and there is sufficient evidence (from research in Sarawak) to prove that availability, and apparent preference for processed food has not reduced hunting levels in natural forest.

## **DRAINAGE OF WETLAND FOREST**

Drainage of wetland forests is part of timber extraction practices, and no measures are taken to ensure these drainage systems are closed upon completion/ expiry of forest concessions. The result of drainage, particularly of peat swamp forests, is the lowering of the water table and subsequent degradation of the forest ecosystem.

## **FOREST FIRE**

A direct consequence of drainage and the lowering of groundwater levels in wetlands, particularly in peat swamp forests, is damage from fire. Combustion of dry peat soils, whether intentional or climate-induced, has devastating effects on forests, wildlife and the environment, with the smoke produced affecting air quality on a regional scale. Efforts to manage forest fires should not be focused only on putting out fires, but instead address the causes of fires.

## **FRAGMENTATION OF FOREST**

Large-scale development often results in patches of natural forest, pristine or degraded, remaining on the landscape. This fragmentation of forested habitats exposes remaining patches to risk, makes its wildlife populations vulnerable to hunting, and displaces large mammals such as elephants and tigers.

## **MANAGING FOREST FOR FRESHWATER SUPPLY**

The critically important role that natural forests play as a reservoir of freshwater is often ignored in land use planning. As forested lowlands continue to be lost to other uses, pressure is increasing on hill forests. Inappropriate development in hill forests, and conversion of wetlands, is threatening to destroy areas vital to the continued supply of freshwater, and this problem is threatening potential reservoir areas close to urban concentrations.

## **MANAGING FOREST FOR RECREATION AND TOURISM**

The emphasis on nature-based tourism in Malaysia is dependent upon a secure and sustainable resource base, i.e. areas of high quality forest set aside for tourism and recreational activities. Protected forests already play this role to a certain extent, but there is a need for a concerted and strategic effort to identify high quality "nature tourism" destinations, and secure these sites for properly managed tourism development.

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## **MANAGEMENT CAPACITY**

Managers of protected areas and other forests, including concession forests, should have sufficient training in forest management from an ecosystem perspective, and not solely from a forestry viewpoint.

## **SUSTAIN ABILITY OF MANAGEMENT RESOURCES**

Managers of protected areas and other forests, including concession forests, should have sufficient financial and manpower resources to be able to manage their areas in an efficient and professional manner.

## **BIO-PROSPECTING**

Tropical forest ecosystems are the main source of organic and chemical compounds, which form the base for most of the pharmaceutical products in use today. The field of research into new compounds, their origins and development is expected to continue its exponential growth in the coming decades. The resources and technology for prospecting currently lies mainly outside the country, and partnerships are being formed to transfer this technology to Malaysia.

## **INTELLECTUAL PROPERTY RIGHTS (IPR) AND BENEFIT SHARING**

In cases where the discovery and development of a product was based on information and assistance derived from traditional knowledge, the provider of the information has ownership of the knowledge. The owner of the IPR has the right to receive benefits from profits derived from the development and marketing of the product.

The potential profits from the eventual development and marketing of a product derived from Malaysian-based research and development should be shared in an equitable fashion. Appropriate benefits should be transferred to the people, or the source of knowledge, that led to the discovery and development of the products.

- Action 1.1:** Carry out a review of policies and legislation that have an impact, and to encourage the adoption of the National Policy on Forests by all states on the conservation and management of forests, and make recommendations for appropriate changes, if necessary. Linked to this is a need to review the status of implementation of existing forest policies and legislation in all states in the country.
- Action 1.2:** Initiate and contribute to, a review of the effectiveness of riparian forest reserves under current practice, and make appropriate recommendations for amendments, if necessary.
- Action 1.3:** Promote the protection of all remaining pristine natural forest areas in the country.
- Action 1.4:** Advocate against the establishment of forest estates in natural forest areas.

- Action 1.5:** Promote a nationwide total ban on all hunting for sport or commercial purposes. Hunting for subsistence amongst forest dwelling communities (primarily in Sabah and Sarawak) should be allowed for cultural reasons, and subject to the relevant laws that apply.
- Action 1.6:** Promote the wise use of wetlands: drainage of wetlands should be subjected to proper and detailed assessments of their impacts; mitigation measures should be identified and undertaken to ensure no alteration of hydrological regimes takes place in wetland forests; guidelines for the utilisation of water resources from wetlands should be prepared and implemented nationwide.
- Action 1.7:** Document and disseminate information on the impacts of increasing forest fragmentation on the long-term viability of forest ecosystems.
- Action 1.8:** Promote the preservation of forested areas close to urban centres as reservoirs for freshwater. The functionality of these forests is proportional to their area size, and all effort should be made to maintain the maximum area possible. These forests should be maintained as closed-canopy ecosystems, to enhance their water retention functions.
- Action 1.9:** Advocate the need for areas of pristine forests to be set aside for the purposes of recreation, recognising that all Malaysians should be able to enjoy the beauty and tranquil environment of tropical rainforests as part of our heritage. Such areas should be subject to management, in the form of management plans, to ensure activities and infrastructure do not compromise the resource upon which economic sustainability is based.
- Action 1.10:** Expand the Society's capacity in forest conservation issues, through networking and the development of staff and members, and identify a suitable institutional mechanism (e.g. a working group on forests) to coordinate implementation of this Policy and Strategic Plan.
- Action 1.11:** Advocate the need to devote additional manpower and financial resources for the conservation and management of forests in the country.
- Action 1.12:** Promote and/or support the establishment of a centralised system of control over research and bio-prospecting of genetic resources. This entity should have the authority to issue research and prospecting permits, and to ensure research is conducted in a responsible, transparent and professional manner, and that benefits derived from the use of genetic resources, accrues to the source of knowledge. MNS should forge long-term collaboration with the existing Biodiversity Centres in Sabah and Sarawak in order to advance this.

## Strategy 2: Managing Forests in a Sustainable Manner

### INTEGRATED MANAGEMENT PLANNING

Traditionally, management plans for protected areas and forest plantations have adopted a single-use approach. In many cases, this has led to a drastic reduction in the overall ecosystem value of the area.

Increasingly, the concept of integrated management planning, which takes into account the multiple-use value of these areas, is being recognised as the more appropriate and beneficial approach. However, best practice models of integrated management planning are lacking for tropical forest areas; more effort needs to be directed to document and field-test the validity of such models.

### ENSURING ECOLOGICAL CONTIGUITY (BIOLOGICAL CORRIDOR)

Biological corridors linking blocks of forest should be maintained in accordance with the ecological requirements of animals and plants. Forest contiguity is required to ensure ecosystem health and functionality, and should always be preserved to the maximum possible. Preserving small isolated patches of forests does not contribute in the long term towards the conservation of biological diversity, and this practice should be strongly discouraged.

### MANAGING FOREST FOR TIMBER PRODUCTION

Sustainable forestry practices are highly publicised in Malaysia, but on the ground implementation is poor. Reduced-impact logging (RIL) systems are not implemented as widely as they should be, and there is currently no policy to enforce this requirement on the timber industry.

Concession owners should be required to manage their forests as an ecosystem, with the eventual aim of preserving ecological integrity and wildlife populations in addition to commercial timber stands. In line with practical and implementable sustainable forestry management, forest management units should be bigger in size and with longer tenure.

### ILLEGAL LOGGING

Illegal timber extraction in varying scales is a widespread activity in Malaysia. The offenders are largely sawmill operators and middlemen employing locals to steal timber from forest reserves and protected areas.

**Action 2.1:** Promote the development of integrated management plans (which incorporate zoning, tourism and development plans) for all forest areas, with a particular emphasis on protected areas. Actively advocate the use of these plans to guide decisions that are made in relation to land use and development planning in and around these protected areas.

- Action 2.2:** Work towards ensuring that custodians and managers of forests in Malaysia recognise that tropical rainforests are a diverse assemblage of different plant and animal communities, and that the value of natural forests should not be attributed solely to commercial timber species, or density of forest stands.
- Action 2.3:** Take a pro-active role, through advocacy, science and partnerships, in ensuring that contiguity of forested areas is maintained, i.e. minimise further fragmentation of natural forests. Wildlife corridors should be broad, and based upon ecological requirements of species rather than administrative and/or political boundaries.
- Action 2.4:** Contribute towards ensuring that tourism and recreational infrastructure such as buildings, hides, bridges, boardwalks and trails are appropriately designed to minimise impacts on the forest and to retain the aesthetics of the environment.
- Action 2.5:** Strongly advocate that forest concession management is undertaken comprehensively, that the focus of such management is forest ecological integrity and that sufficient resources are allocated for such activities. Linked to this is the need to promote a transparent and accountable system for the allocation of forest concessions.
- Action 2.6:** Promote the active enforcement of existing legislation pertaining to the harvesting of forests and forest resources. In particular, strongly advocate imposing stiff penalties on those caught logging illegally. Enforcement of relevant laws should be stepped up and appropriate resource allocations should be made to enable proper enforcement to take place.

### **Strategy 3: Involving the Malaysian People in Forest Management**

#### **PUBLIC AWARENESS**

Traditionally, management plans for protected areas and forest plantations have adopted a single-use approach. In many cases, this has led to a drastic reduction in the overall ecosystem value of the area.

Increasingly, the concept of integrated management planning, which takes into account the multiple-use value of these areas, is being recognised as the more appropriate and beneficial approach. However, best practice models of integrated management planning are lacking for tropical forest areas; more effort needs to be directed to document and field-test the validity of such a model.

## **COMMUNITY PARTICIPATION**

Communities living in and around forests continue to have access to forest resources, based on traditional customary rights (e.g. Native Customary Rights in Sarawak). With decreasing natural habitat and increasing population pressure, forest resources are increasingly being harvested in an unsustainable manner. In many cases, these have led to conflicts between local communities and forest/protected area managers.

- Action 3.1:** Work towards greater awareness and understanding of the values, functions and benefits of forests among all levels of society.
- Action 3.2:** Make primary and secondary schools the target of a concerted effort to increase awareness on forests and the role they play in increasing the quality of life for all Malaysians.
- Action 3.3:** Continue to play an active role (including sourcing for resources) in the design and implementation of awareness programmes about forest conservation. Such programmes should be coordinated to ensure better results and effectiveness in reaching all levels of society.
- Action 3.4:** Promote empowerment of local communities to take responsibility for using forests wisely through increased participation of stakeholders in the management of forests.
- Action 3.5:** Advocate and support the development of alternative livelihood options to reduce the pressure on natural forests and forest products.
- Action 3.6:** Progress international, regional and local partnerships in areas of research, training, education, technology transfer and community empowerment.

## **Strategy 4: Integrating the Conservation and Sustainable Utilisation of Forests into National, State and Local Planning and Decision-Making**

### **RIVER CATCHMENT APPROACH TO LAND-USE AND DEVELOPMENT PLANNING**

River systems play an important role in the supply of freshwater. Water quality of most Malaysian rivers has been drastically reduced as a result of up-stream forestry-related activities, which compromise the functionality and physical characteristics of these river ecosystems. This results in substantially higher costs of water treatment for human consumption.

## **INTER-SECTORAL COORDINATION**

Lack of coordination between planning, development and implementation agencies has been cited as the underlying cause for the degradation of forests within a river catchment. It is also recognised that in many instances, the catchment of a river is located outside the state boundaries within which the river flows, and where water is extracted. The activities within one state can therefore have devastating effects on water supply and ecosystem functions in a neighbouring state.

- Action 4.1:** Promote and support basin-wide approaches to forest conservation and management; work closely with state and local planning and development authorities. Through advocacy and awareness-raising, aim to ensure that land use and development planning take into account and enforce the preservation of river catchment forests, and that these areas are excluded from disturbing activities such as logging, land clearing and intensive development.
- Action 4.2:** Where they do not already exist, promote the establishment of river basin management authorities, with responsibility for the development and coordination of basin-wide development plans.
- Action 4.3:** Strongly advocate that all state planning agencies should coordinate their development planning with those of other states to ensure that shared river catchment forests are preserved, and where necessary and possible, managed in collaboration.

## **Strategy 5: Ensuring a Sound Scientific and Technological Basis for Policy and Management**

### **SCIENTIFIC RESEARCH AND DEVELOPMENT**

Research programmes on forests and species are undertaken by various agencies and educational institutions such as Forest Research Institute of Malaysia (FRIM). The focus of research needs to be expanded to approach forest ecology from a wider perspective, one that treats animals and plants as parts of the forest ecosystem.

Sustainable forest management is also dependent upon new technologies; policies are required to encourage research and development along the lines of sustainable forestry. Support should be afforded for the development and application of new and innovative technologies in forest and species management.

### **IMPACTS OF RESEARCH ON FORESTS**

Research activities can have significant impacts on forest ecosystems; proper guidelines and control are needed to ensure that research objectives and activities are in line with identified priorities and do not undermine efforts to preserve and sustainably manage forest ecosystems.

## MONITORING OF FORESTS

State-of-the-art technologies are currently available to effectively monitor forests in terms of climatic influences, forest cover, encroachment and negative impacts from activities such as drainage and fragmentation. Such technologies should be utilised to improve forest management in Malaysia.

- Action 5.1:** Document the extent and state of Malaysia's forests and identify priorities for conservation action and rehabilitation.
- Action 5.2:** Identify threats to natural forests in Malaysia and determine priority actions for critical habitats and species.
- Action 5.3:** Monitor the utilisation of, and trade in products derived from forests, including the utilisation of non-timber forest products.
- Action 5.4:** Document and disseminate best practice models in relation to forest management and conservation.
- Action 5.5:** Support the development of a strategic and coordinated national level forest research effort to fill gaps in existing knowledge and information.
- Action 5.6:** Advocate the need for proper supervision and control by the relevant authorities of research activities in natural forests. Research activities that involve damage to the forest (such as building of canopy cranes, total collection of seeds and seedlings from mother trees) should be subject to assessment of their impacts, and include stipulations for remedial measures, prior to the start of research activities.
- Action 5.7:** Advocate the need for proper supervision and control of research activities on mammals and birds that involve the trapping and collection of specimens using traps, nets or other means. Such research projects should provide strong justification for their actions, and be subject to controls and monitoring by the relevant authorities.
- Action 5.8:** Promote the need for herbariums as a scientific and management tool; plant specimen collections should be maintained and regularly added to. These collections and the information they contain should be made readily available to those concerned with the research and management of forests. Appropriate resources should be allocated towards the proper and professional curation of such specimen collections throughout the country.
- Action 5.9:** Encourage tertiary educational institutions to implement long-term scientific research programmes in an effort to further contribute towards our knowledge of forest ecosystems and their species.
- Action 5.10:** Support mechanisms to encourage the understanding and application of research findings, including the publication and dissemination of research papers and reports.
- Action 5.11:** Support, and where possible, initiate, National and State level programmes for research in, and development of appropriate, innovative, state-of-the-art techniques for forest management.

## **Strategy 6: Promoting Compliance with International Commitments**

Malaysia is signatory to the Convention on Biological Diversity (CBD), Ramsar Convention on Wetlands, Convention on Trade in Endangered Species (CITES), UN Framework Convention on Climate Change (UNFCCC) and several other biodiversity-related conventions and treaties, which provide, to varying degrees, for the conservation and management of forests and forest resources. The actions defined in this document are designed to contribute to the implementation of the obligations contained within such treaties.

### **TIMBER CERTIFICATION SCHEMES**

Malaysia has been developing a certification scheme through the Malaysian Timber Certification Council (MTCC), and MNS has been an active participant in the process. This process should strive for full compliance with the Forest Stewardship Council (FSC) certification scheme. The process of achieving compliance with FSC principles, standards and criteria should be transparent, with full consultation and involvement of all stakeholders, particularly social groups representing the native communities whose livelihoods and culture are linked to natural forests.

- Action 6.1:** Undertake a review of all forest-related obligations contained within the biodiversity-related conventions and treaties that Malaysia is party to, and assess the status of compliance.
- Action 6.2:** Actively promote and support the implementation of strategies and objectives for the conservation and management of forests and forest resources outlined in the National Policy on Biological Diversity.
- Action 6.3:** Actively participate in the process of developing fair and equitable standards for timber certification, and its implementation in Malaysia.

## **Strategy 7: Ensuring Protection Of Representative Forest Types**

There is a need for a systematic approach in gazetting protected areas, i.e. a comprehensive protected area system for Malaysia. The rationale behind a comprehensive protected area system is to ensure complete representation of all natural ecosystems within a network of legislative protection and management.

This is a critical requirement due to the uniqueness and interdependency of species and habitats across the range of geographical, altitudinal and climatic diversity of Malaysia. The current representation of key/ priority ecosystems within the network of protected areas in Malaysia does not afford sufficient long-term protection to the following ecosystems:

## **MANGROVE FOREST**

Mangrove forests are one of the most economically significant, as well as one of the most threatened forest ecosystems in Malaysia. Coastal development has caused widespread loss of mangroves throughout the country, and this continues to take place despite a national moratorium on clearing of mangroves.

Aquaculture in mangrove areas, despite the wealth of documented evidence on its short-term benefits and long term non-sustainability as a land use option, continues to grow as an industry in Malaysia. There appears to be no concern for the nursery function of mangroves for near-shore fisheries, and the fact that our country's rich fishery is increasingly being threatened by conversion of remaining mangroves.

## **FRESHWATER SWAMP FOREST**

Swamp forest growing on alluvial (non-peat) soils is the rarest forest type in Malaysia, and distributed patchily. The largest areas of freshwater swamp forest used to occur in Tumboh (Perak) and Sungai Sedili in Johor. Tumboh swamp forest was completely cleared to make way for a flood by-pass in 1991 and Sungai Sedili remains the last significant area of freshwater swamp forest in Peninsular Malaysia.

In East Malaysia, freshwater swamp forests occur primarily as a successional ecosystem, an early stage of peat swamp forest development.

## **PEAT SWAMP FOREST**

Malaysia and Indonesia represent the evolutionary centres of the tropical peat swamp forest ecosystem. The high animal and plant diversity of this habitat is well documented, and on-going research continues to discover new species to science. The development of peat forests varies greatly from the west to the east coast of the Malay Peninsula, and reaches its climax development in the peat dome formations of Sarawak.

The loss of level dry lowland dipterocarp forests has resulted in peat swamp forests harbouring the last remaining populations of lowland specialist animal species, almost all of which are currently listed as globally threatened species. Plans to convert large tracts of the remaining areas of peat swamp forest (e.g. to oil palm plantations) threaten this globally significant habitat. Drainage of peat soils have been shown to be the main factor in the spread of forest fires in the region, with devastating effects on biological diversity and human health.

## **LOWLAND MIXED DIPTEROCARP FOREST**

Lowland mixed dipterocarp forest on level terrain is the most endangered forest type in Malaysia, a direct result of widespread conversion for development and agriculture. This habitat type supports the highest diversity of animal and plant species in the tropics, surpassed only by coral reefs. A very high number of globally threatened species are found in this habitat, some exclusively so.

## **MONTANE FOREST**

Forests occurring over 1,800m harbour a high level of species diversity and endemism, particularly the Bornean mountain ranges. Development has been sporadic in these areas, but is envisaged to increase in the near future. Logging in this altitudinal zone is exerting pressure on the remaining montane forests.

- Action 7.1:** Develop and promote an integrated national conservation plan for the protection of Malaysia's natural forest habitats and ecosystems, including recommendations for a comprehensive national protected area system for Malaysia.
- Action 7.2:** Proactively advocate and participate in the design of a comprehensive protected area system in Malaysia, which includes all representative forest habitats and ecosystems. Linked to this, to actively promote, and where appropriate assist in ensuring that the entire genetic pool of Malaysian rainforests is preserved in the form of representative areas, forest types and geographical features, and that complete representation of the genetic pool is placed within the national protected area system.
- Action 7.3:** Work in partnership with relevant agencies, institutions and organisations to ensure that each protected area designated to preserve a representative sample of Malaysia's forest ecosystem and forest genetic pool is viable in its own right, and not subject to threats to its long term survival.
- Action 7.4:** Actively advocate the inclusion of representative areas of peat swamp forest, reflective of its diverse development and ecology, into the national protected area system for the long-term preservation of Malaysia's ecosystem diversity, and assist in developing guidelines for development of peat soils with particular emphasis on the maintenance of hydrological functions.
- Action 7.5:** Actively promote enforcement of the moratorium on development in mangroves to preserve all remaining mangrove areas in the country. Work towards ensuring that land-based fish and shrimp culture in mangrove or brackish areas are no longer advocated, and that no further development of aquaculture should take place in mangroves or its associated ecosystems.
- Action 7.6:** Actively advocate that all remaining areas of freshwater swamp forest should be afforded immediate protection, and be excluded from development plans.

- Action 7.7:** As an urgent priority, actively advocate that all remaining areas of lowland mixed dipterocarp forests should be given the highest conservation priority, and included within the national protected area system.
- Action 7.8:** Assist in identifying important mountain areas to be included within the national protected area system. Promote research on montane species and communities to gather sufficient information required to manage these montane habitats properly.

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