

AN EVALUATION OF POTENTIAL PLANNING PROCESSES FOR NATIONAL PARKS
IN MALAYSIA

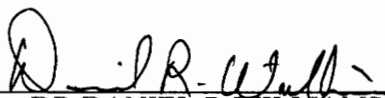
by

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(ABSTRACT)

This project paper describes various natural resource planning processes from the United States of America, Canada, and Latin America. All the processes are rational approaches used to solve planning and management problems of the parks, especially the selection and designation of appropriate park lands, effective location of developments, zones of ecosystem and wildlife protection, and effective management of natural resources and park visitors.

The evaluation criteria used to judge the usefulness of the planning processes for Malaysian parks have been developed from many sources; these include the natural resource planning guidelines of Australia (CONCOM), Great Britain (Countryside Commission), ASEAN Expert Group on the Environment (ASEAN), the Organization of American States, the International Union for the Conservation of Nature and Natural Resources (I.U.C.N Commission on National Parks and Protected Areas), the Commonwealth of Virginia (The Virginia Outdoors Plan 1984), Driver and Brown (1978) Stankey, McCool and Stoke (1984), Manning (1985), Lloyd and Fisher (1972), Goodman (1975), and Hutto, Reel and Landres (1987).

Upon the completion of the evaluation, this paper presents a recommendation for the planning process for the Wildlife and National Parks Department of Malaysia. The planning process suggested is designed specifically to gain public trust and support for the cause of the Wildlife and National Parks Department, as well as to lead to the formulation of an environmentally sound procedure for the development and management of parks. The process includes guidelines for the use and protection of the park, including the provision of access, recreation opportunities, facilities

and other services. In addition, the process incorporates an environmental impact assessment and public comments on the Wildlife and National Parks Department's proposals for future management of national parks.

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1.0 CHAPTER 1: PROBLEM STATEMENT AND PURPOSE

This chapter is designed to introduce readers to Malaysia, provide a problem statement, and describe the purpose of the paper.

1.1 Background

Malaysia is a country with a total land area of around 330,433 sq. kms. West Malaysia, commonly known as the Peninsula Malaysia, consists of 13 states and extends 740 km (460 miles) from Perlis in the north to the Strait of Johor in the south. It consists of the States of Johore, Kedah, Kelantan, Melaka, Negeri Sembilan, Pahang, Perak, Perlis, Pulau Pinang (Penang), Selangor, Terengganu and the Federal Territory (Wilayah Persekutuan) of Kuala Lumpur (see Figure 1 and Figure 2). East Malaysia consists of two states, Sabah and Sarawak, and is separated from the Peninsula by about 530 kms of the South China sea.

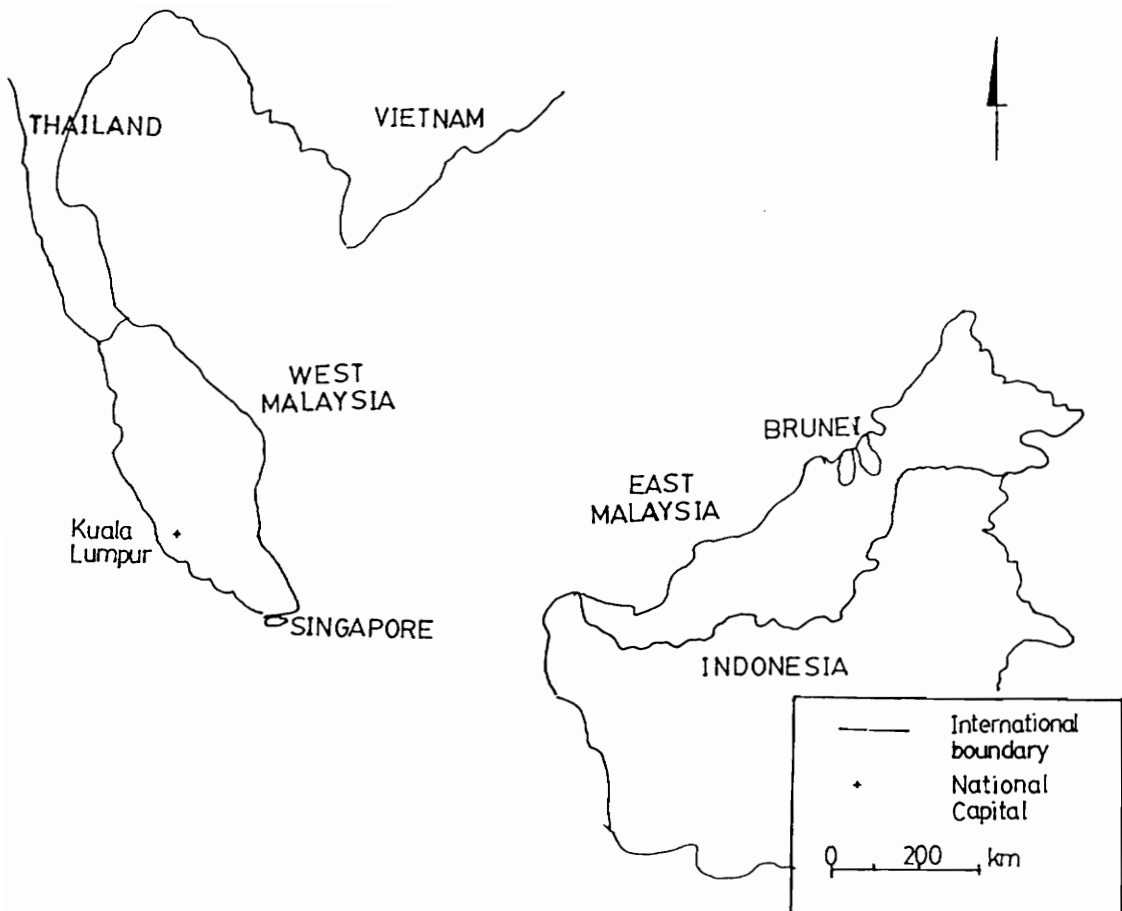


Figure 1. Map of Malaysia

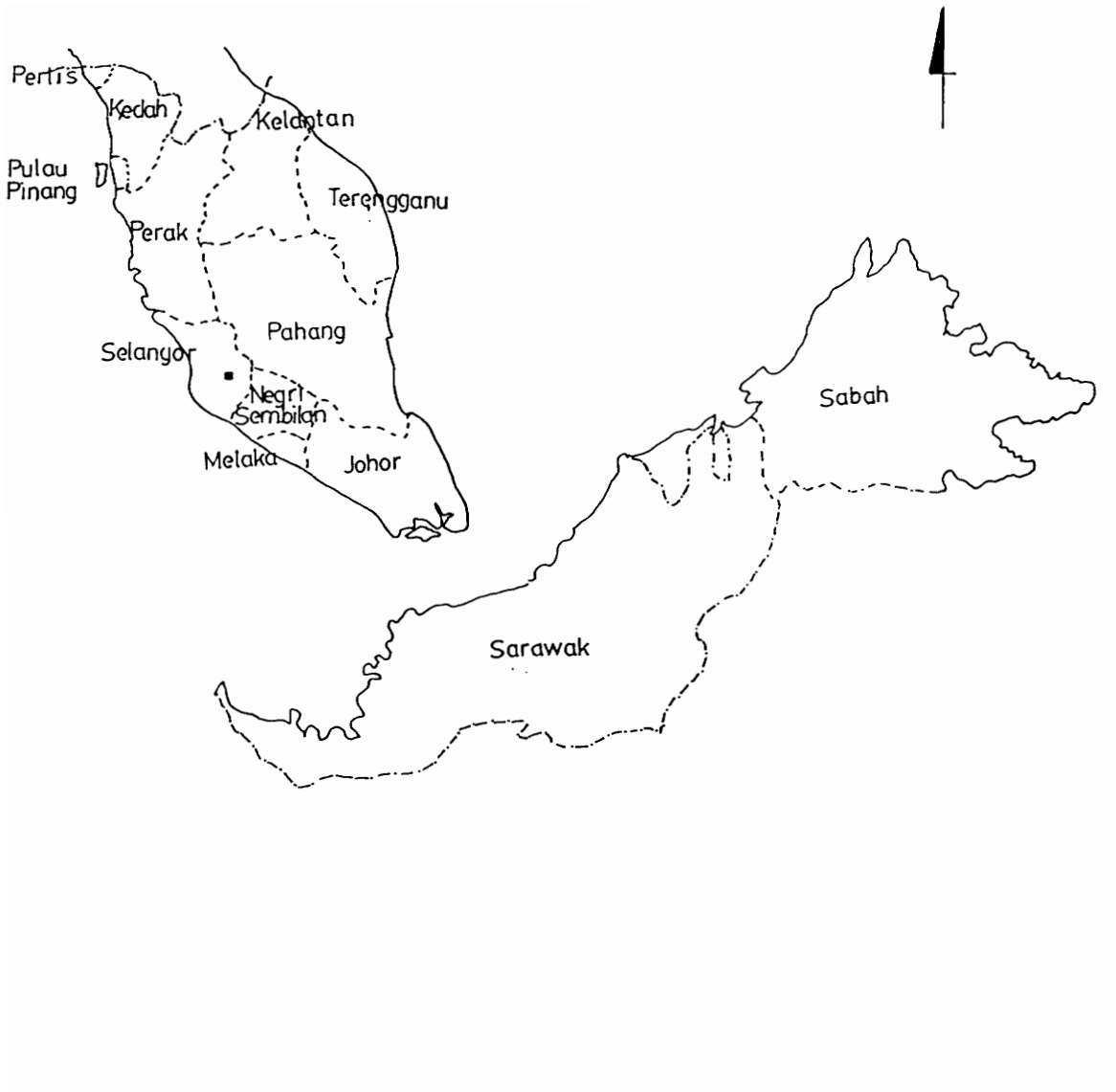


Figure 2. States of Malaysia

The two eastern states of Sabah and Sarawak in East Malaysia are in the northern part of Borneo and are about one and a half times the size of the Peninsula. Given its humid climate, East Malaysia is a land of lush tropical plant life. The forested area approaches nearly 90 % of the total area. The rain forest is made up of towering trees, usually hardwoods species such as Tualang (*Koompassia excelsa*) and Kempas (*Koompassia malaccensis*) which are about 30 m high and which form dense canopies that can keep the forest floor in perpetual shade.

The natural vegetation of Peninsula Malaysia is essentially tropical forest or jungle, which varies in composition and structure depending on the elevation of the land above sea-level and the nature of the habitat. Tropical forests are extremely rich in species, and those of the Peninsula (apart from the mangrove) are no exception. It is estimated that there are some 8,000 species of flowering plants of which at least 2,500 are trees, and it is common to find more than a hundred species of trees on a single acre. The most important tree species are Meranti Merah and Mengkulang of Dipterocarp and Shorea families. A relatively large proportion of these tree families are being cut and processed into sawn timber and plywood. Despite the inroads of extensive logging and the opening of the land to large development schemes, over 70 % of the country is still under forest.

There are mangrove forests along the edges of and in the estuaries of the main rivers, and particularly along the country's sheltered west coast. These forest are flooded with the rising tides, are unusual for tropical vegetation in the very few species found, and are interesting for their various adaptations. Such adaptations include the erect asparagus-like breathing roots which many of the plants have adopted as a result of living in the water.

The wealth and variety of the vegetation of the jungle have enabled an astonishing proliferation of animal types, while the constant, high temperature enable many to attain sizes not found elsewhere. The tiger takes a place of pride in any description of the animals of Malaysia, as it is the national animal of Malaysia. Tigers are fairly plentiful, although seldom seen. The panther or leopard is a particularly beautiful animal with spots and stripes merging into blotches, but it is so timid that it seldom appears in open area. Elephants exist in medium-sized herds in the deep jungle, and are

comparatively plentiful. Less common is the seladang, the largest member of the wild ox family in the world. These animals weigh up to 1,500 kgs, and are extremely vicious if cornered or injured. Two other big game animal are worthy of mention and are totally protected on account of their rarity: the tapir - a beast which slightly resembles a boar but has the beginnings of a trunk-like proboscis, and one species of rhinoceros, the Sumatran species, which is now in danger of extinction. Efforts are currently being made under the leadership of the Wildlife and National Parks Department to save the remaining Sumatran rhinoceros in Malaysia.

The Peninsula, and Malaysia in general, is very rich in its bird life. About 620 species have been recorded in the Peninsula alone, but by no means have all been listed. Many have extraordinarily beauty with bright plumage, including Peafowl, the Argus Pheasant, the Golden Aurole, a great variety of Kingfishers, and the endangered Hornbill.

The population of Malaysia today is about 17 million. The outstanding characteristic of Malaysia's population is its highly variegated ethnic mix, which makes it one of the prime examples of a multi-racial society in the world. Broadly speaking, Malaysia's ethnic groups fall into two main categories: those with culture affinities indigenous to the region and to one another, which are classified as bumiputra, and those whose cultural affinities lie outside. The bumiputra groups themselves are highly differentiated. There are three broad categories: (1) the aborigines; (2) the Malays, and (3) Malay-related. The non-bumiputra groups consist primarily of the Chinese and the Indians, with much smaller communities made up of Arabs, Eurasians, Europeans and Singhalese.

The state of Perak has the highest population with 1,805,000 people, followed by the state of Johore (1,638,000), Selangor (1,515,000), Sarawak (1,307,000), Kedah (1,116,000), Sabah (1,011,000), Federal Territory (1,003,000), Pulau Pinang (954,000), Kelantan (894,000), Pahang (799,000), Negeri Sembilan (574,000), Terengganu (541,000), Melaka (465,000), and Perlis (148,000). The growth rate of the urban population was expected to remain high throughout the Fifth Malaysia Plan period (1986-1990), partly as a result of greater rural to urban migration. The urban popu-

lation was expected to increase at a rate of 4.2 % per annum from 5.9 million in 1987 to 7.3 million by 1990. The annual rates of growth of the Malays and other bumiputra in urban areas was expected to be the highest, i.e, six percent per annum. Chinese and Indian urban population growth rates were expected to be 2.5 % and 3.0 %, respectively, by 1990, with the Chinese accounting for 43.7 % of the total urban population compared with 10.1 % for the Indians (Fifth Malaysia Plan, 1986).

The Malaysian economy mainly depends on its natural resources, industry, commerce, banking and insurance. Natural resources are the major contributor to government revenue. Among these are rubber, palm oil, cocoa, timber, tin, and petroleum and natural gas. The Fifth Malaysia Plan prepared in 1986 forecasted that the Malaysian economy would grow steadily to 1990, although growth would be moderate. It was expected that real Gross Domestic Product (GDP) would achieve a growth of 4.0 % by 1990. Given this level of domestic output, the Gross National Product (GNP) was envisaged to increase in current terms by 3.5 %. Per capita income was expected to increase by 0.8 percent to \$4,256 from \$ 4,220 in 1988.

Education as a whole comes under the Ministry of Education which manages a comprehensive school system from primary to university. Primary school enrollment (children aged 6-11 years) in 1988 was 2,273,000; secondary school enrollment (ages 12-17 years) was 1,374,000, and university enrollment was about 55 percent of the percentage of total primary school age population.

In its culture, Malaysia is particularly rich, being the home of representatives of four of the world's major cultures -- Islamic, Chinese, Indians, and Western -- as well as possessing a vigorous indigenous culture of its own.

The land use patterns in Malaysia can be described in terms of percent of the total land base of the country. Agriculture consists of about 54 %, forestry is 36 %, national park and wildlife reserve is 6 %, city is 2.5 % and other is 1.5 %.

There are 11 national parks found in Malaysia with about 1.98 millions hectares of land. Of the 11, five parks are in the State of Sabah, three parks are in the State of Sarawak, and the Peninsula includes three parks.

1.2 Problem Statement

The primary goal of Malaysia national parks is to protect, preserve, and whenever possible, to restore the resources of the parks for the benefits of the people and for future generations. In order to achieve this goal, the Wildlife and National Parks Department carries out the following activities: protect and preserve virgin forests which have been gazetted as national parks, preserve such resources as the mountains, rivers and caves, carry out the management of the habitat for many wildlife species, including such endangered species as Sumatran Rhinoceros, and promote recreation activities.

There are three examples of national parks that represent common problems of Malaysian national parks. These national parks are Taman Negara National Park (located in the eastern part of West Malaysia), Endau-Rompin National Park (located in the southern part of West Malaysia) and Kinabalu National Park (located in the state of Sabah -East Malaysia).

Taman Negara National Park was established in 1938, is comprised of 433,400 ha., and a considerable part of the park is mountainous. This national park's lands are extremely rich in species of flowering plants and have an enormous variety of wildlife and two major rivers which are able to attract many visitors and tourists. The main problems of Taman Negara National Park at the present time are the inappropriate location of park developments such as campsites, fishing spots, picnicking and swimming spots. The chalets are located too close to the park headquarters. Other problems are insufficient zones of wildlife habitat protection and inadequate amount and location

of area to be managed as essential habitat for threatened and endangered animal species. Thus, the park fails to protect such endangered species as the Sumatran Rhinoceros, which remains on the brink of extinction.

The Kinabalu National Park was established in 1964 with the size of 75,370 ha. It was the first national park ever created in East Malaysia. The Kinabalu National Park is world famous for its mountain, a granite massif of 4101 m. The park is also well known for its rich plant life. Vegetation ranges from the tropical lowland forest to the alpine variety. More than 1,000 species of orchids, 27 species of rhododendrons, and 9 species of nepenththes are found in the park. *Rafflesia*, the world's largest flower, is also found in the park. There are 450 species of ferns as well. The interior of Kinabalu National Park is criss-crossed by a series of mountain ranges and hills. The most prominent range is the Crocker Range with typical heights of 762 m to 914 m, and it separates the narrow lowland of the northwest coast from the interior. The Crocker Range culminates in Mount Kinabalu (4175 m), the highest mountain in Malaysia and in Southeast Asia.

Kinabalu National Park was established to preserve the ecosystem found in East Malaysia. However, recognizing the needs to enhance the standard of living in East Malaysia, especially in Sabah, various developments were carried by the state government in the park, and one of them is promoting recreation and tourism. The major problems of Kinabalu National Park are insufficient locations and management of wildlife habitat and inappropriate location of area for recreation activities.

The Endau-Rompin National Park occupies 2,260 ha of land. The park was established to preserve the indigenous flora and fauna of a jungle wilderness and the scenic landscape of the region. The Endau-Rompin National Park area contains irregular and mountainous lands. There are also seven major rivers found within the park boundaries. The major force behind the establishment of this park was the presence of threatened and endangered wildlife species, including Sumatran Rhinoceros. After the park was established in 1985, the Wildlife and National Parks Department of Malaysia implemented its management plan with the goal of developing certain park lands to

provide more access to the park. There are apparently many problems faced by the present management plan: (1) inappropriate location of nature trails for education, (2) recreational uses and developments are located based on activities rather than by combining both activity and experience demands, (3) park headquarters is too close to recreation sites, and (4) emphasis for wildlife and species management received low priority.

In general, the problems of the existing parks in Malaysia are confusion on what should be the primary purposes of the parks, inappropriate developments, inappropriate location of recreation activities, and inadequate areas for endangered wildlife species. All these problems seem to be due to poor planning. What appears to be needed is an improved process of general management planning within national parks in Malaysia.

1.3 Purpose of the Paper

The purpose of the paper is to review, assess and suggest a comprehensive general management planning process for parks managed by the Wildlife and National Parks Department of Malaysia. Such a planning process should result in allocation of appropriate uses on national park lands, effective location of developments and zones of ecosystem and wildlife protection, and effective management of natural resources and park visitors. Such principles of planning as the need to provide a wide range of recreation opportunity, the need to save and conserve wildlife species in the park from becoming extinct, the desire to maximize long term public benefits in an environmentally sound manner, and the need for public participation will guide the review and development of a recommended planning process.

2.0 CHAPTER 2: REVIEW AND ASSESSMENT OF CURRENT RESOURCE PLANNING IN MALAYSIA

This chapter is designed to introduce readers to Malaysia's governmental structure, governmental decision processes, land allocation issues, natural resource policy and principles that need to be followed in resource planning, and the planning structure and processes of key resource agencies.

2.1 Governmental Structure

The description of the governmental structure of Malaysia begins with consideration of the constitutional authority and continues with a description of the federal government, state governments, district governments and the legal system.

2.1.1 Constitutional Authority

Malaysia is a constitutional monarchy. Its head of state is the Yang Di-Pertuan Agong (the King) who is one of the Malay rulers elected for a term of five years by his brother rulers, who in turn have acted according to government advice (Prime Minister). It has a bicameral parliament consisting of a Senate (Dewan Negara) and a House Of Representatives (Dewan Rakyat). Elections to the House of Senate and the House of Representatives are held every five years on the basis of universal adult suffrage, each constituency returning one member ¹.

The authority for legislative, executive and judicial powers originates from the constitution of Malaysia, which was adopted in 1957. This constitution provides for a federal form of government, a cabinet system of administration, an independent judiciary, fundamental liberties and a bill of rights, and authorities of federal and state governments.

The Constitution of Malaysia sets out three types of legislative jurisdiction; federal, state, and concurrent. Under the combined effect of Articles 74 through 80, the federal government's legislative and executive authority extends to those subjects itemized in the federal and concurrent lists (in the Ninth Schedule of the Constitution). The federal list includes a wide-ranging group of subjects, from external affairs, industry, public works, scientific and technical research to education and public health. The concurrent list applies to those matters which either the state or federal governments may regulate, provided that, in the case of conflict, federal law takes precedence (Article 75). Items in this list include soil conservation, disease prevention, national parks and the protection of wildlife, and town and country planning. Another provision which is designed to establish Federal authority is Article 81, which provides that the executive authority of the states shall be so exercised as to assure compliance with federal law. Further, provision is made in Article 83 for the federal government to acquire state land for federal purposes and in Article 94 to enable

¹ The number of constituencies is dependent on the population of the States. Some states are divided into 8 constituencies and some have 18 constituencies.

federal powers to be exercised in respect to those State lands (Hashim, 1976). The implications of these provisions for the formulation and implementation of natural resources management policy and law will be discussed in a later section.

2.1.2 Federal Government (Executive Branch)

The executive branch of the federal government comprises the Prime Minister (who is also the Chairman of the National Front Party) and his cabinet, constitutionally created bodies like the National Land Council, the National Finance Council and National Council for Local Government, and the Public Service.

The Prime Minister is the head of government, and is responsible for informing the Supreme Head of the Federation (the King) of the general administration of the country. The Prime's Minister Department has become the pivotal unit within the government administration, because it coordinates and supervises the implementation of national policy. An important branch of the Prime Minister's Department is the Economic Planning Unit (EPU) which oversees the formulation of overall national development planning . At present, the cabinet consists of 23 ministries, many of whom have portfolios which have programs relating to environmental and natural resources issues (see Appendix A).

2.1.3 State Government

Each of the 13 states is governed by its own constitution and legislative assembly. Although each of the state constitutions differ in detail, broadly speaking they embody the fundamental principles of cabinet government. The elected ruler of the state acts on advice given by the State Executive

Council, in much the same way as the Supreme Head (the King) is advised by the Prime Minister. The head of the Executive Council is the Chief Minister or the Chief Executive.

Although each of the States, in joining the Federation in 1957, ceded some fundamental rights to the federal government, the states still wield a considerable degree of authority and autonomy, especially over natural resources such as agriculture, forests, and mining (Article 74 and the State List). Technically, it is possible for the state's control to extend beyond these subjects to those matters in the concurrent list (for our purposes, national parks and wildlife, drainage and irrigation, town and country planning) over which the federal authorities have not yet extended their powers. In addition, each of the states retains a residual authority to regulate and control any matter not specifically referred to in the Constitution (Article 77). In the case of Sabah and Sarawak, which joined the federation at a later date, it is fair to state that, as a concession for joining the Federation, more legislative and executive power has been retained by these states than was yielded to federal government. Evidence of this can be found in the amount of legislation and federal policies (e.g the National Forest Policy) which do not apply to those two states.

2.1.4 District Government

At the lower level of government administration are the district and local authorities. Although local government is a state matter under the Federal Constitution, the district governments have become an executive arm of both federal and state governments, because they are subject to the coordinating and advisory jurisdiction of the federal government's Ministry of Local Government. The district governments have jurisdictions over zoning of land and its uses, building permits and licences, and coordinating the development programs of various agencies at the local level. The District Officer is responsible for general administration and revenue collection.

2.1.5 Legal System

The Malaysian Legal System is a combination of Malay Customary Law, Common Law and Statutory Law. The first set of law is comprised mainly of Muslim Law and is under state control. Common Law refers to those principles of law derived from case law and the British Common Law tradition. With possible exception of nuisance, none of these Common Law rules will be of direct relevance for this paper. The bulk of the laws to be discussed in this paper falls under the third category-Statutory law. Statutory law is a law that has been passed by the Parliament.

2.2 Governmental Process

In this section, governmental processes in general are described. Discussion covers the process by which a Bill is passed by the Parliament, overall government planning and decision processes, government policies, and natural resource management policy.

2.2.1 The Parliament

Since legislation to implement national policy is originated and passed by Parliament, it is important to understand how Parliament works.

In the Malaysian Constitution, the Parliament of Malaysia consists of the Yang di-Pertuan Agong- (The King), the House of Representative (Dewan Rakyat), and the House of Senate (Dewan Negara). Parliamentary procedure in Malaysia is based on the procedure of the United Kingdom

parliament and those of other commonwealth countries. The procedure in both the House of Senate and the House of Representatives is generally similar.

The date of the first meeting of each session is determined by the King, and the dates of subsequent meetings of the House are fixed by the leader of the House. The Speaker must call a meeting of a House if the Prime Minister informs him that the public interest is served if the House meets.

How are economic, social, natural resource and environmental policies made by parliament? First, a bill (a law in draft) is introduced. Subject to what is said below, it becomes law when it has been passed by both Houses and assented to by the King. A bill may originate in either house, but it is rare for one to originate from the House of Senate. Any member of Parliament may introduce a bill, but it is rare for any other than a Minister (Head of a Ministry) to do so.

When a Minister wants to introduce a bill concerning economic, social, natural resource or environmental issues in parliament, he first outlines and draws up its policy in consultation with the Attorney General. After that, interested parties such as the Treasury and other ministries express their views on the proposed bill. The Minister then seeks and obtains Cabinet approval to have the bill drafted. In preparing the bill, the Economic Planning Unit will advise the Minister, so that the broad objectives of the Malaysia Government are met by the proposed bill. The bill is drafted by a parliamentary draftsman in consultation with other interested parties. The Minister seeks and obtains Cabinet approval for the bill. He gives notice to the clerk of the House and the clerk of the Senate of his intention to introduce the bill. The clerk of the House instructs the Government Printer to print the bill and supplies copies to all members of the Houses.

In each House a bill is required to go through the first reading², second reading ³, and the third reading ⁴ After the bill has been passed by the House of Representatives, it will be transmitted to the House of Senate. At the meeting of the House of Senate, the President of the Senate makes an announcement to the effect that he has received a message from the House of Representatives. The clerk of the Senate then reads the message, and the reading of the message constitutes the First Reading of the bill in the Senate. A Senator, usually a Minister, sponsors the bill and names a date for a Second Reading and Third Reading of the bill. This procedure is similar to that of the House of Representatives. When the bill has been passed by both Houses, the bill then is forwarded to the King upon whose consent it becomes law.

When the House of Senate disagrees on the bill passed by the House of Representatives, it amends the bill and passes it back to the House of Representatives. Then the procedure in the House of Representatives will be as follows. The minister in charge of the bill in the House names a day for the consideration of the House of Senate amendments. The House of Representatives may amend the House of Senate amendments, agree to them, or reject them. If the House of Representatives rejects them, the Speaker will appoint a Committee of three members to draw up a reason (or reasons) for rejection which will be subsequently presented to the Senate. If the Senate refuses to accept the House of Representative's rejection of its amendments, the House of Representatives can remain adamant in its insistence on the rejecting amendments. In such a case, a committee of three members will again be appointed to draw up a reason (or reasons) to be submitted to the Senate. The Senate can either accept the rejection or alternatively move that the bill be laid aside. But the Senate's power to delay a bill passed by the House of Representative cannot exceed one year, or in the case of a supply bill, one month.

² This is only a formality. The Minister, in whose name the bill is introduced, stands in his place before the Speaker to read the short title of the bill. Then, the Speaker will assign the date for the Second Reading from the Minister.

³ This is the most important stage of the bill because the general principles of the bill are debated by the House at this time. Then the Minister will ask the Speaker to accept the bill with or without amendment.

⁴ At this time the bill will be read for a third time, and it will be voted on, passed or rejected.

The Yang di-Pertuan Agong gives his assent by affixing the public seal to the bill. The bill is then published as a law in the Government Gazette. It normally comes into force when published, but Parliament may in the law itself provide for it to come into force on a future date, or even give it retrospective effect.

2.2.2 General Planning and Decision Processes of the Government of Malaysia

As mentioned previously, each of Malaysia's 13 states is governed by its own constitution and legislative assembly. Although each of the state constitutions differ in detail, broadly speaking they embody the fundamental principles of cabinet government. (Cabinet Government means that the administration of the nation is carried out by various ministries which is headed by a Minister. Under each ministry, subsequent authorities are delegated to various departments.) The states have a considerable degree of authority and autonomy, especially over important natural resources such as land, agriculture, forests, and mining. The states' control can also extend beyond these subjects to those matters in the concurrent list (for the purpose of this paper, wildlife and national parks, drainage and irrigation, town, and county planning) to which the federal authorities have not extended their powers. The overall effect of the system which has already been briefly described is to create a relatively powerful state government, especially as far as natural resources management is concerned.

As a counterbalance to the states' powers, the federal government is given the powers to initiate its overall policy and in certain areas to actually influence the decision-making powers of the state governments. These check and balances, which were thought expedient from a political standpoint have, by their very nature, presented some limitations to the effective implementation of a strategy for natural resources which knows no such political boundaries. Therefore, it is good to have the federal government involved, because natural resource issues extend beyond states.

To address these limitations in natural resource matters, the National Land Council was established in 1957. The National Land Council is a constitutional body consisting of twenty-two persons and is chaired by the Prime Minister. Nine members from the public services are appointed by the Prime Minister. The remaining members are state representatives, one from each state appointed by the Ruler or Governor. The Council advises on all matters relating to forestry and agriculture. A policy formulated by the Council is binding on both federal and state governments. The Council is further required to advise on any matter put to it by the federal or state authorities.

Also, the federal government has the right to tender advice to the states on the technical aspects of various types of planning, and may maintain the necessary research organizations to that end.

2.2.3 The Prime Minister Department

As mentioned earlier, this department is the most important in Malaysia. It coordinates the general policies of the federal government (see Appendix B). It consists of 13 sections which carry out various main tasks of the government. For the purpose of this paper, only two sections that most strongly influence social and natural resources policy will be discussed and described. These sections are the Economic Planning Unit and the Implementation Coordination Units.

1. The Economic Planning Unit

The Economic Planning Unit (EPU) is the central staff agency of the Government for planning national development. It acts as the secretariat to the National Planning Council (NPC); the National Development Planning Committee (NPPC), Foreign Investment Committee (FIC), the Economic Panel, and the Special Privatization Unit.

The National Planning Council consists of 23 Ministers. It considers all matters of major public policy in the economic and social fields affecting national development. The National Develop-

ment Planning Committee consists of senior members of the public service and it principally acts to formulate and review all plans for national development and make recommendations on the allocation of resources. In the exercise of its functions, the National Planning Committee may use its own discretion to make decisions or sometime may refer to Cabinet or the Planning Council if the situation becomes complicated.

The Foreign Investment Committee also consists of senior members of the public service, and its main function is to consider applications from the private sector and foreign investors who wish to invest through acquisition of assets or takeovers of business entities. The Economic Panel comprises political leaders, senior government officials from public agencies, private firms and academicians who are experts in the fields of trade, industry, commerce, natural resources and investment. This panel reviews and examines national economic and social policies, issues and problems. It assists the National Planning Council in getting the private sector's input into the formulation of economic and social policies.

2. The Implementation Coordination Unit

This unit, which was established in 1971, is headed by a Director who is responsible to the Director General of the Prime Minister Department. The principal objectives of the Unit are to:

- ensure the implementation of government policies, in particular the New Economic Policy and the Privatization Policy, and to see that their goals are achieved;
- ensure the implementation of all development projects and programs;
- ensure the effective integration of federal and state development policies and programs; and
- implement special programs and projects specified by the government.

Thus, the Unit's functions are concentrated on coordinating and monitoring the implementation of development projects, and contributing in general to planning national development.

2.2.4 General Government Policies

Malaysia's overall development policy is contained in the long-term development framework found in the New Economic Policy (NEP). This policy is formulated by the Economic Planning Unit (EPU) of the Prime Minister Department with the consultation of various ministries that are responsible for natural resources.

Basically, the policy has two important goals: eradication of poverty and restructuring of society.

To accomplish this, the Malaysian government puts emphasis on:

- **Manufacturing-** It is the main factor of growth over the period of the Fifth Malaysia Plan (1986-1990). Since government finances are limited, prospects for manufacturing, and by implication the whole economy, will depend on private investment. The focus is on developing resource-based industries like rubber processing in which Malaysia enjoys comparative advantage. Tariffs will be reviewed to make home industries competitive and encourage export. Small industries will be upgraded, and existing industry linkages improved. In addition, export incentives will be reformulated. Local firms will be encouraged to enter joint ventures with international firms to gain access to global marketing links. Finally, emphasis will be in promoting self-sufficiency, through trust agencies and public enterprises, to promote citizen participation in industry.
- **Regional and Urban Development-** The country has been divided into six regions (northern, central, eastern, southern, Sabah and Sarawak) for development purposes under the Fifth Malaysia Plan. Within each region, steps are taken to restructure the agriculture sector and

modernize the rural areas through the rural urbanization program. The Fifth Malaysia Plan recognizes the significant role of regional and urban development in reducing economic disparities among regions;

- The Environment- The Fifth Malaysia Plan seeks to balance exploitation of natural resources with care for the environment and ecosystem stability. It envisages better enforcement of laws protecting the environment and better coordination between federal and state government, as well as between policy formulating and program implementation agencies. Citizen groups are encouraged to participate in protecting the ecosystem. Also stressed is the need to incorporate environmental concerns in development planning and project implementation;
- Agriculture and Rural Development-The Fifth Malaysia Plan emphasizes modernizing and commercializing the smallholder of the agricultural sector, increasing the extent of government involvement, increasing public participation in government decisions, and improving sector-wide planning and policy analysis. The emphasis is on promoting an increase in production, which is expected to come from both an expansion in area of crop production as well as improvement in yield;
- The Private Sector- The private sector will play a leading role under the Fifth Malaysia Plan. The government will intensify its efforts to create a more attractive investment climate by introducing additional incentives and measures, as well as ensure the participation and contribution of both local and foreign investors. The strategies to be adopted include the promotion of diversified manufactured exports linked more to the domestic industrial sector and the agricultural sector, the development of a small-scale industries, and the expansion of tourism;
- Tourism and Recreation- The government views tourism as an important income and as a source of jobs. It is expected to bring in as many as 4.32 million visitors, who will spend about \$3.26 billion in 1990, compared to the 3.22 million visitors and \$1.7 billion in 1985. The promotional campaigns to attract visitors will center on four themes: conventions, vacations,

sightseeing, and special interests such as nature lovers wanting to go on jungle trips in national parks and forest reserves. In the development of recreational areas in national parks, priority will be given to the existing areas where lack in management programs, restoration, and proposing new recreational areas;

- **Education and Training-** The plan introduces a new concept of integrating the school into the entire community. The approach is to get the entire community involved for the benefit of the school and its projects, instead of restricting participation to only parents of school children.

The government will take steps to gradually reduce the size and role of the public sector through consolidation to ensure efficiency, accountability and productivity in the management of government departments and public enterprises. The private sector is expected to play the leading role in the growth of the economy (Government of Malaysia, Fifth Malaysia Plan, 1986).

2.2.5 Natural Resource Management Policy

Malaysia is one of the few countries in the Third World which has adopted an environmental policy as a component of its development and management strategies. The Malaysian Government, concerned about the rapid exploitation of land through logging to enhance agricultural development and anticipating even more extensive demands on land and other natural resources, developed an ambitious policy which places heavy emphasis on environmental control and natural resources management.

The Fifth Malaysia Plan (FMP) emphasizes the need to balance economic and social development with the maintenance of sound environmental conditions. The plan covers four main issues for achieving environmental quality:

1. Natural resource and ecosystem management;

2. Research into land-use and management;
3. Forestry management;
4. Environmental pollution control.

The plan's procedures regarding environmental issues entail the following. First, an Initial Screening (IS) should be done on all development projects (by the project agency) to determine the potential environmental effects. If these effects are not fully known, the procedure should move to an Initial Environmental Evaluation (IEE) phase. If this evaluation determines that the environmental effects is significant, the next step is to initiate an Environment Impact Assessment (EIA). The IS and IEE reports will be sent to to the Ministry of Science, Technology and the Environment who will consult appropriate federal and state planning units. After their review, the report and recommendations should go to an Approving Committee (either the State Planning and Development Committee for state projects or the Estimate Sub-Committee of the Treasury Department for federal projects). The recommendation which goes to these committees should be one of the following:

1. Project to be approved as planned;
2. Project to be approved with certain conditions;
3. Project to be rejected.

Generally, the proposed plans or projects that originate from the states or federal agencies are presented to the Economic Planning Unit of the Prime Minister Department (EPU), which screens them for overall economic development potential before submitting them to the Estimate Sub-Committee of the Treasury Department. After another review by the National Development Planning Council, the proposal goes to the National Economic Council for review on compliance with political objectives. From here, the proposal is examined by the Cabinet. After this final stage

of review for overall compliance with national policy, the proposal is presented to the Implementation and Coordinating Unit (ICU) of the Prime Minister Department, which is responsible for monitoring decisions and ensuring that agencies expedite the implementation of decisions or project proposals.

It is clear that the EIA proposal is designed to take place before a project proposal is submitted to the EPU. More specifically, the policy seeks the establishment of an Environmental Impact Assessment Procedure “which will seek to quantify trade-offs... bearing in mind that the adoption of environmental protection measures will need always to be in balance with development costs” as well as the establishment of other new national parks (Wycherley 1969).

2.2.6 Land Use Policy

The National Land Code (Act 56 of 1965) was passed to develop policy about land allocation and use. Under this code, land is divided into three major categories: (1) Agriculture, (2) Buildings and (3) Industry. In response to the National Land Code, the Malaysian Land Capability Classification System (LCC) was also established in 1965. The Malaysian Land Capability Classification System is based primarily on the suitability of any area for producing agricultural crops, especially rubber and oil palm. This policy was adopted as an administrative regulation, and is widely used as a planning guide in national land development projects.

This land classification system was developed in order to allocate the land for various development agencies. The classification is done by the National Land Council. The agencies which are affected by this regulation are Agriculture Department, Forestry Department, Mining Department, Drainage and Irrigation Department and Wildlife and National Parks Department.

The land classification of LCC are as follows (Patton 1965):

- Class I - Land possessing a high potential for mineral exploitation.
- Class II - Land possessing a high potential for agricultural development with a wide range of crops.
- Class III - Land possessing a moderate potential for agricultural development but with a limited range of crops.
- Class IV - Land possessing a high potential for productive forest development.
- Class V - Land possessing little or no mineral, agricultural or productive forest development but suitable for alternative development purposes such as protective forest reserve, water catchment areas, wildlife reserve, parks, etc.

2.3 Key Natural Resource agencies

Any review and assessment of natural resources planning processes must begin with a brief history of the three agencies having primary jurisdiction over natural resource lands and planning in Malaysia: The Department of Agriculture, the Department of Forestry and the Department of Wildlife and National Parks. This section covers a description of the agencies and their mission and goals, and the planning processes of each.

2.3.1 Description of Mission and Goals of Key Resources Agencies

The Department of Agriculture is under the Ministry of Agriculture. This Department serves agricultural interests, the main foundation of Malaysia's economy, and thus is of great importance.

Development policies in Malaysia have given heavy emphasis to agriculture and improving the socio-economic status of the rural population.

The mission of the Agricultural Department of Malaysia is intensification (enhancing the productivity of existing landholders through the application of technology, improved planting materials, fertilizers, better irrigation, and pest and disease control), extensification (extending the area of land in production by bringing new land under cultivation), and diversification (increasing the range of products produced through introduction of wider cultivation of new crops such as oil palm or cocoa, or by increasing crop value through processing before export, thus increasing the opportunities for rural wage employment).

The Department of Agriculture's goals are to improve the socio-economic status of rural citizens, produce sufficient food for the nation and for export, and promote the development of agro-based industries so as to increase employment opportunities in rural areas.

It has the following objectives:

- to increase productivity through effective transfer of farm technology;
- to effect changes in the attitudes of farmers so that they are willing to accept new technology and to participate in agricultural development;
- to increase the contribution of the agricultural sector to the national economy by encouraging and promoting the cultivation of specific crops;
- to provide agricultural extension services, communication and support services, plant protection services, soil management services, agricultural mechanization services and certification of planting materials and seeds to agriculture development agencies and other interested clientele.

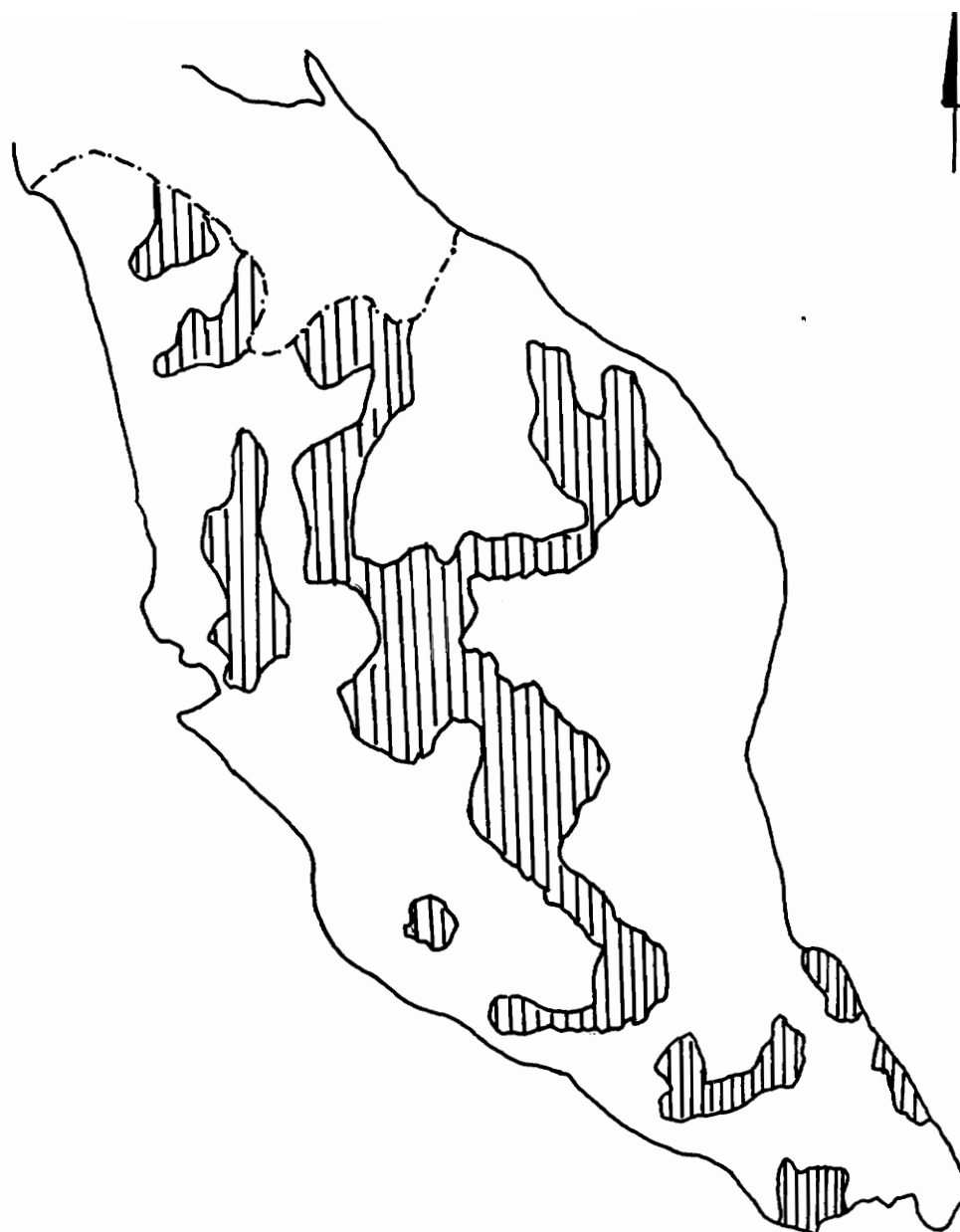
- to provide extension services on development projects which are run by the Ministry of Agriculture.
- to provide advisory services to agro-industrial concerns, particularly to those involved in the manufacture and formulation of pesticides and fertilizers.

The Department of Forestry is under the Ministry of Primary Industries. The Ministry of Primary Industries appears to be second most important of Malaysia's government. The Ministry of Primary Industries is responsible, in varying degrees, for research, development and marketing of Malaysia's primary products such as rubber, oil palm, tin, palm kernel oil, coconut oil, tobacco, pepper, pineapple, cocoa, timber, copper and other minerals. Its goal is to increase benefits for the country in term of income to producers, particularly small landholders, contribution to gross national product (GNP), employment, and enhancement of Malaysia's foreign exchange earnings.

The Forestry of Malaysia is responsible for the administration and management of forest resources, including regulating and controlling the harvesting of the forests, rehabilitating and reforesting the harvested and denuded forests, regulating and controlling the development of forest industries, and providing training, programs, and facilities for staff. This department is also responsible for carrying out research on all aspects of forestry, including research on wood and wood products.

The mission of Forestry Department of Malaysia is to establish and manage sufficient areas of land strategically located throughout the country as Permanent Forest Estate for the production of timber and other commodities and for the conservation of soil, water and environmental quality (see Figure 3).

The goals of the Forestry Department of Malaysia are regeneration of the logged forests based on cutting cycles of 30-35 years with the emphasis on natural regeneration, rehabilitation of devastated or poor forests by means of enrichment planting, and planting of quick growing trees.



Existing Forest Reserves

0 50
mile

Figure 3. Land allocations for forestry: Map shows the existing forest reserves in West Malaysia

The Wildlife and National Parks Department is under the Ministry of Science, Technology and the Environment. In general, The Ministry of Science, Technology and the Environment is responsible for the formulation of policies, planning, coordination, and implementation of programs and activities in science and technology to meet the needs of the country; and for providing more effective development programs so as to achieve the aims of the New Economic Policy.

The specific objectives of this Ministry are:

- to promote and encourage the development of science and technology, and to raise the quality of life of the people;
- to undertake research, planning and formulation of policies and to ensure the widespread use of science and technology for the well being of the people;
- to ensure that material progress through science and technology does not result in pollution which may lower the quality of life of the people or destroy flora and fauna;
- to ensure that there is a balance in development and material progress through science and technology and the spiritual development of each individual.

In order to achieve its aims, the Ministry carries out eight activities (see Appendix C). Only two activities affect the overall planning of the Wildlife and National Parks Department.

The mission of the Wildlife and National Parks Department is to manage wildlife reserves, sanctuaries, and national park lands and resources using the best systems available to meet the needs and desires of present and future generations, while protecting and enhancing the environment.

The goals of this department are to protect, improve and manage wildlife habitat, protect wildlife species, and protect wildlife through habitat management and limited hunting under the provision of the Wildlife Act 1976; and protect, preserve and whenever possible, restore the resources of parks

for the benefits of the people and future generations. In order to achieve its goals, the Wildlife and National Parks Department has to carry out the following activities:

1. carry out law enforcement activities under the direction of the Wildlife Act of 1972 (1976) and National Park Act of 1980;
2. improve and manage wildlife habitats and breeding of some wildlife species in captivity;
3. inform and educate the public about the conservation of wildlife;
4. protect and preserve the wildlife reserves, sanctuaries and national parks for the benefit of the future generations;
5. carry out research, collect and analyze wildlife and national parks data, and update techniques on wildlife and park management.

The national parks and reserves of Malaysia's Wildlife and National Parks Department are shown on the map (see Figure 4).

Malaysia

2.3.2 History of National Park Establishment in Malaysia.

The history of how a piece of federal and state land becomes a national park can be divided into two periods.

1. Before the National Park Act of 1980.

The establishment of national parks before 1980 was influenced by the needs to have places for people to enjoy wildlife. Generally speaking, it was public policy to put high priority on the protection and management of national parks and preserves. However, all too often, when a conflict arose or when there was a budget crisis, it was the conservation plan that lost fund-

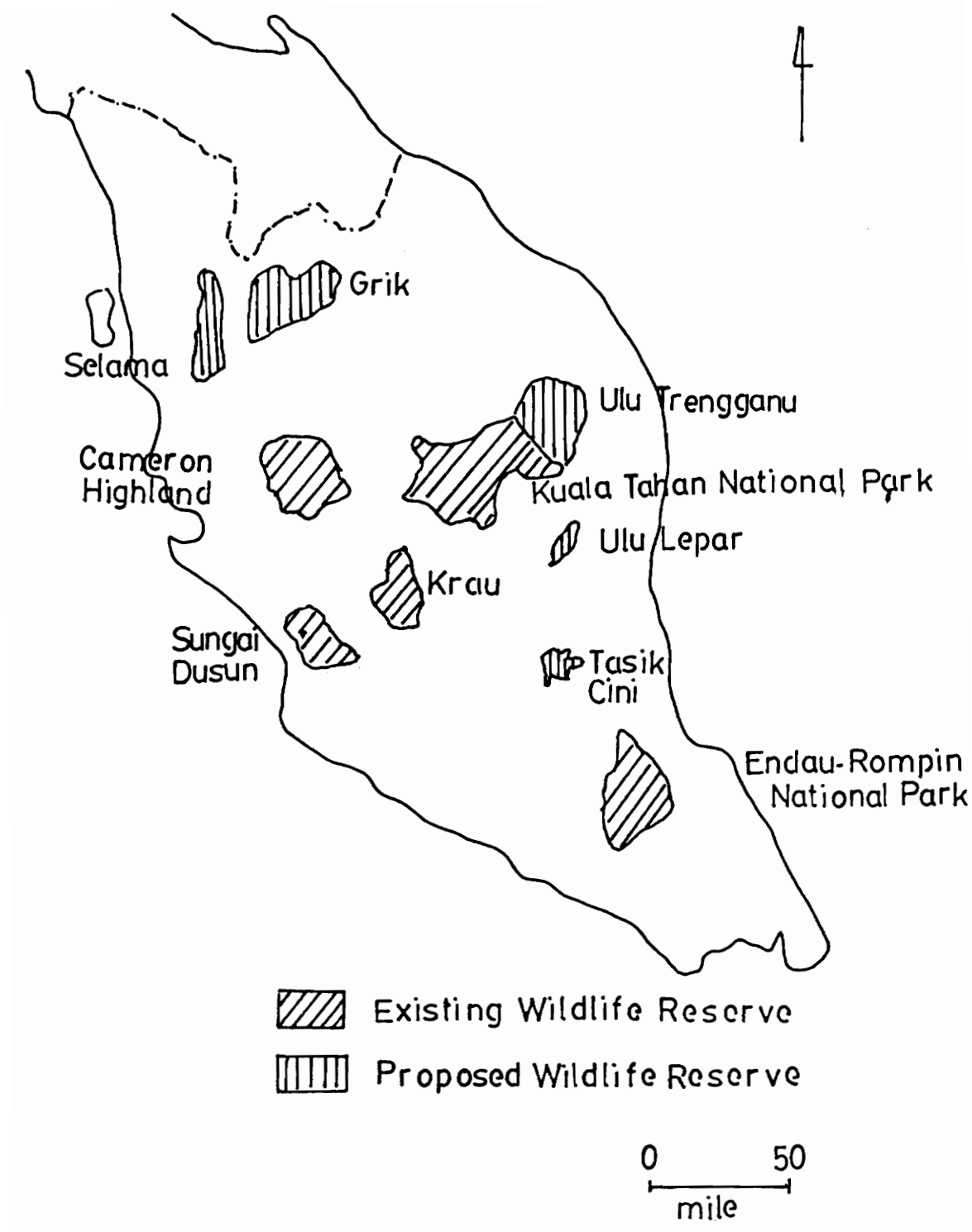


Figure 4. Land Allocation for the Wildlife and National Parks Department: Map showing the existing national parks and reserves in West Malaysia

ing. In general, it appears that government during the period tended to be more interested in development projects with quick economic returns.

The initial national park proposal normally originated from a resource agency, such as the Wildlife and National Parks Department. Prior to the initiative, the National Park Section reviewed the existence of the state lands that might be ideal for the establishment of a park. This review considered existing demands for wildlife protection and its values, recreation needs, population growth, agricultural development trends, and the result of the previous research on specific wildlife species. After examining these resource values and needs, the National Parks Section decided whether or not to come up with a proposal to create a national park.

Since the land constitutionally belongs to the state government, any national park proposal was sent to the appropriate state government through the Ministry of Science, Technology and the Environment. The Ministry of Science, Technology and the Environment examined whether the proposal met overall ministry objectives.

At the State Government level, the proposal was heard at a State Executive Council meeting which was headed by the Chief Minister. The State Government normally took several years to come up with a decision. But, once the decision to make a park was made, the land boundaries were demarcated on the map and on the ground by the Survey Department. Then, this park was gazetted in government notification as a national park, and the federal government had complete control over the park.

2. After the National Park Act of 1980

Under the National Park Act of 1980 (Section 3.1 to 3.4) the State Government can act on a Minister's request (in this case, a Minister of Science, Technology and Environment recommendation) to allocate state land (including marine areas) to be a national park with a suggested name. The same Act calls for establishment of a National Parks Advisory Council (see

Appendix D) and National Park Committee. The Minister's request will be based on the advice of the Wildlife and National Parks Department and the National Parks Advisory Council. The Act also states that the National Parks Advisory Council shall advise the Minister on how to protect, preserve, plan, and manage national parks and provide guidelines to the National Park Committee which the Act created at the state level. This committee will facilitate the achievement of objectives of the present and future parks for that state.

Because land is a state matter, and because the state was always a major obstacle for the Ministry of Science, Technology and Environment to achieve its objective of creating new parks, the National Park Act of 1980 directed the state to take increased jurisdiction to protect, use, manage and develop national parks. The National Park Committee of affected states were to act according to the direction given by the Minister of Science, Technology and the Environment, who based his recommendations on the advice of the National Park Advisory Council at federal level. Since the Wildlife and National Parks Department in each state is federally staffed, the role and responsibility for planning and managing national parks has become a federal and state responsibility.

2.4 The Planning Processes of Key Resource Agencies

Reviewing and developing a natural resources planning process to protect parks in Malaysia might best begin with a review of the current planning processes of the country's three key natural resource agencies. These agencies are the Department of Agriculture, the Department of Forestry and the Department of Wildlife and National Parks.

1. The Agriculture Department Planning Process

The planning process of the Agriculture Department is guided by the National Agriculture Policy Act of 1984. This policy was formulated by National Land Council. It is based on the New Economic Policy of Malaysia, and its goals are to improve the socio-economic status of Malaysia, increase incomes in rural society, and produce sufficient food for Malaysia.

The current planning process of the Agriculture Department has the following steps:

a. Defining the issues and problems;

The Planning and Development Branch in the Federal Department of Agriculture is responsible for preparing comprehensive plans for land developments with various alternatives. Most of the planning issues are determined by the National Land Council. Other more specific issues are identified by an interdisciplinary team (ID). All members of ID team are on the Agriculture Department's staff with one representative from the Agricultural Extension Branch, Agricultural Mechanization Branch, Commodity Development Branch, Planning and Development Branch, Soils Management Branch, Training and Career Branch and the Directors of Integrated Agriculture Programs in each state. This step also includes discussion between the Interdisciplinary team and the National Land Council on the objectives of the management area that the plan is to address. The purpose of this discussion is to assure that the problems of farmers' productivity, commercialization and marketing of agricultural products are clearly stated, and that their constraints and potential solutions are understood by the planning team.

b. Data and Information collection;

The Planning and Development Branch determines the availability of existing data about issues and problems. Data availability will condition the scope, content, and the final product of the issues and problems. Existing maps containing natural resource information, such as geology, vegetation, soils, land capability, hydrology, climatology and so forth, may be critical. This step also assures the availability of socio-economic data, including population growth and

migration statistics, and economic data. All seven Branches will supply information on their subject areas to the Planning and Development Branch in the preparation of the plan.

c. Formulation of Alternatives;

Based on data collected during the second step, a wide range of alternatives are formulated. In this step an integrated agricultural area is identified and divided into zones - sections of the land which require similar management practices to meet objectives. One of the objectives may be to increase productivity rather than the development of new areas. Each zone will have different management objectives and different issues. The description of each zone consists of a brief statement about the characteristics of the crops, terrain, access, and uses relative to adjacent zones. At this step, each alternative is represented by one crop on selected soil types that seems to respond to the issues and problems determined by the National Land Council and the interdisciplinary team.

d. Analysis of Impacts;

After identifying the alternatives, the planning team will identify factors that may cause problems; for example, land productivity is reduced by a poor irrigation system. The planning team will analyze the capability of each alternative to overcome problems by visiting each affected site area and considering such variables as drainage, water supply, and such soil properties as resistance to erosion and compaction. Access is analyzed and environmental values are checked.

e. Selection of Preferred Alternative;

At this stage of the planning process, the alternative with greatest output in term of productivity from step # d, Analysis of Impacts, will be selected. The preferred alternative often varies with the kind of soils at the site. In some sites the soil is capable of promoting good and

healthy growth of oil palm, cocoa and rubber tree. If this happens, oil palm will be selected as the preferred planting in the Integrated Agriculture Program.

In summary, the Planning and Development Branch in the Federal Department of Agriculture prepares a comprehensive plan for land development with various alternatives. It proposes a preferred alternative, and it is submitted to the National Land Council for comments and its approval. Upon approval of the plan, the Federal Department of Agriculture will then assign it to the State Department of Agriculture for implementation.

It remains a Federal Government's concern because agriculture plays such an important role in the economy of Malaysia. In meeting its goals, the Federal Department of Agriculture is not only responsible for planning, but it also provides the technical support services, manpower, financial and infrastructural facilities to the Departments of Agriculture in the 13 States.

2. The Forestry Department planning process

The present planning process of the Forestry Department resembles a rational comprehensive planning approach. It follows the National Forest Policy, which was promulgated by the National Land Council on April 10th, 1978.

The Planning and Development Division of the Forestry Department at the central Office in Kuala Lumpur is responsible for developing and proposing management plans for rational land use in the Permanent Forest Estate. This Permanent Forest Estate is divided into three categories; (1) Protective Forests, (2) Productive Forests, and (3) Amenity Forests.

Ownership of the nation's forests rested chiefly in the hands of the State Governments, but in practice, the Federal Government has managed forestry production and conservation in Peninsula Malaysia, while Sabah and Sarawak have maintained some autonomy.

The Forestry Department's planning process is as follows:

a. Defining Area Problems;

The development of a Forest Management Plan is carried out by the Management and Development Section. The overall planning goal is to respond to requirements stated in the National Forest Policy. The purpose of the first step is to identify the area's problems. The major problems of many forest areas are (1) high annual logging rate due to insufficient regulation and control of harvests of resources, (2) lack of a reforestation program, (3) inadequate rehabilitation of devastated or poor forests by means of enrichment planting or establishment of quick growing trees, (4) insufficient emphasis on environmental quality, especially at logging sites, thus promoting destructive agents such as erosion and landslides, and (5) inadequate forest management for education and preservation. The planning team typically lists some additional issues from the adjacent forestland. These issues might be the availability of labor and location and number of sawmills. When identifying and defining the issues and problems are complete, the planning team will formulate area objectives and then begin to make a list of solutions which seem appropriate to each area. At this stage, the planning team will also produce an Interim Management Plan guidelines to be used until the management plan is approved by the National Land Council. This leads the planning team to move to the field to collect all necessary data.

b. Collecting Data and Information;

The collection of background data involves assembling socio- economic data, resource data (natural and cultural), and other basic data relating to problems identified. Most of the data on the forest lands are obtained from the Malaysian Forest Research Institute (FRI). These data include topography, soils and climate and their influence on production. Other sources of information are statutory bodies such as the Malaysian Timber Industry Board (MTIB) and the Timber Trade Board (TTB). MTIB and TTB provide information on marketing and trade, quality control regulation of trade and timber, citizen participation in timber production, utilization of timber and methods of processing timber.

c. Formulation Of Alternatives;

Three alternatives are prepared at this step. Producing the alternatives involves the analysis of available data and evaluation of future trends. Each alternative is represented by a different number or arrangement of Forest Estate categories. The Forest Estate can be divided into three categories- Protective, Productive, and Amenity Forest Estates. The alternatives can either be a single or more than one of forest estate categories. The alternatives are designed and analyzed to achieve goals and objectives for priced outputs in a manner that achieves the greatest excess in the value of priced outputs in relation to cost of production, while meeting all specified constraints and objectives. Benefit values for timber include market values (revenues) for sawntimber and products. Non-priced benefits include maintaining fertility of soil and maintaining threatened and endangered species. In each alternative, the planning team will use considerable information to describe each management proposal. This step also contains an expanded list of descriptions of the problems stated in step 1, plus several illustrative landscape photos that have the capability to generate the actual representation of the management area for decision makers.

d. Evaluation Of Alternatives;

The planning team proceeds to evaluate all the alternatives by determining which alternative has the highest output. The highest output is determined in terms of appropriate logging rate, adequate enrichment planting programs, sound environmental quality and standards, and maximizing social and economic benefits. Since each proposal has only three alternatives, every alternative has the opportunity of being selected. But the alternative of highest projected outputs will normally be selected. The evaluations of the alternatives are done comprehensively to reduce the current problems mentioned in step # a. In the case of environmental protection, the Forestry Department prepares an Environmental Impact Assessment (EIS) for every forest management plan. The EIS is needed to enhance the quality of the ecosystem for the nation and its people.

e. Selection Of Preferred Alternative;

This is the final result of the third and fourth steps. This selection is normally based on the Present Net Value (PNV) and net public benefits. Since all costs and benefits cannot be priced in the analysis, PNV is not the only index used by the planning team to develop, compare, evaluate and select the preferred alternative. Net Public Benefit is measured by both qualitative and quantitative criteria rather than a single measure such as PNV. Alternatives having the highest PNV may not always provide the highest net public benefit when non-priced benefits and costs are considered.

Upon the completion of the planning process, the proposed plan is sent to the Ministry of the Primary Industries. That Ministry in turn submits one copy to the National Land Council for review and comment. The National Land Council will approve or not approve the proposal.

In summary, the Director-General of Forestry is responsible to the Federal Government for the proper and efficient management of the Malaysian Permanent Forest Estate. This is achieved by providing the State Governments, through their respective state Directors of Forestry, with technical advice, assistance and training facilities for implementation of the management plan.

3. The Wildlife and National Parks Department Planning Process

Under the provision of National Park Act 1980, the Wildlife and National Parks Department was given a mandate to manage all national parks in Peninsula Malaysia. The current planning process involves problem definition; collecting data and information; impact analysis; and evaluation.

a. Problem Definitions;

The National Parks Section is responsible for the planning of parks. The purpose of this step is to identify issues and problems and determine whether appropriate solutions might be pos-

sible for each issue or problem. The identification of problems normally is done through monthly meetings of State Directors of the Wildlife and National Parks Department and Division Heads of the Wildlife and National Parks Department and meetings of the National Park Committee from the affected state. Upon agreement in the meetings, the list of priorities is prepared. This development of priorities will always consider the New Economic Policy (NEP) of the government, and goals of the Ministry of Science, Technology and the Environment and the Wildlife and National Parks Department.

b. Collecting Data and Information;

This step includes data collection and development of alternatives. When the issues and problems are identified, the appropriate park superintendent is assigned responsibility for collecting data which are relevant to the issues and problems. Most data are typically obtained from personal observation, examination of geological maps and aerial photos and surveys. Additional data are also available from the Research and Management Section-- mainly on the present status of wildlife species. After all data and information are obtained, the next step is to formulate alternatives. This is a critical part of the planning process for national parks. A broad range of alternatives is formulated by the park superintendent in consultation with the National Park Director. The development of alternatives includes development of zones for wildlife habitat protection, endangered species management, historical and cultural value, recreation activities, and ecological preservation. For each alternative, the park superintendent will define a management prescription.

c. Impact Analysis;

After the management prescription for each alternative is prepared, the park superintendent proceeds to analyze the environmental impact of each practice that may be implemented. The environmental impact is required by the Ministry of Science, Technology and the Environment. Irreversible resource commitments will be noted where appropriate.

d. Evaluation.

This is the final step of the park planning process. The evaluation for each alternative is carried out in term of its cost effectiveness. The park superintendent is responsible to display the average annual cost to implement the various alternatives for the first five years. In this evaluation, the cost -effectiveness method is used. The costs are broken down in major budgetary components including operation, maintenance, and development. These cost breakdowns serve the purpose of more fully explaining the relative differences among alternatives. In the evaluation, the effectiveness is measured in terms of subjective judgment. The effectiveness measures are used so that the alternatives can be adequately compared.

When the park superintendent has completed the evaluation process of each alternative, one alternative is selected. The preferred alternative plan is presented to the National Park Director, who in turn makes some comments. Then, he will forward the proposed management plan to the Director General of the Wildlife and National Parks Department. The Director General selects a preferred alternative based on law, technical information, and professional judgment. He then sends the proposed plan with the preferred alternative to the Ministry of Science, Technology and the Environment for comments on the environmental requirements, and finally the Minister will approve the final version of the plan. One copy of the management plan is then sent to the Treasury, Public Service Department, Economic Planning Unit and the Implementation Unit.

2.5 Summary of Current Planning and Governmental Decision Making Process

The review of the current planning processes of natural resources agencies and decision making processes of the government of Malaysia suggests several characteristics of a workable park planning process in Malaysia. These characteristics are:

1. Due to current government policies, any park management plan must reflect the present National Economic Policies (NEP) before it can be approved.
2. The proposed management plan must include reviews by many agencies, including the National Parks Advisory Council, National Planning Council, the Prime Minister Department, the Public Service Department and the Treasury Department.
3. The planning process must facilitate consideration of governmental policies that affect the entire nation. Existing natural resource policies should guide the planning team.
4. The existing natural resource planning processes generally take a rational approach of identifying issues and problems, data collection, identifying alternatives, evaluation and implementation.
5. The planning process should facilitate consideration of both economic development and resource preservation. It should incorporate an environmental impact assessment procedure for each alternative.
6. The planning for the management plan should facilitate the gathering of advice from both federal and state governments.

7. The planning process needs to be carried out by a planning team rather than by one person. The planning team should be assisted and advised by members outside the planning agency. Such members could be from the Economic Planning Unit (EPU) and the Implementation Coordination Unit (ICU) of the Prime Minister Department, the Agriculture Department, the Forestry Department, and the Ministry of Science, Technology and the Environment.
8. The planning process should incorporate additional issues from outside the park boundaries. Such issues might be economic growth, social needs, and environmental quality.

3.0 CHAPTER 3: CRITERIA FOR EVALUATING THE EFFECTIVENESS OF A NATIONAL PARK PLANNING PROCESS

3.1 Introduction

The Wildlife and National Parks Department of Malaysia is responsible not only for managing specific uses such as recreation and wildlife enhancement on its lands, but also has a mandate to protect, preserve, and if necessary to restore the park ecosystem. Therefore, it is important to have a sound system for zoning the park's resource base and making general management plans for parks.

To permit review of existing planning processes and evaluation of their usefulness for Malaysian national parks, criteria that define an effective planning process must be identified, defined and clarified.

3.2 The Planning Criteria

Several criteria can be used to evaluate the appropriateness and effectiveness of a national parks planning process for Malaysia. The following criteria result from suggestions by recreation and resource planners (Driver and Brown, 1978; Eidsvik, 1978; Ernest, 1986; Stankey, 1977; Stankey, McCool and Stoke, 1984; Wagar, 1966; Manning, 1985; Lloyd and Fisher, 1972; Goodman, 1975; and Hutto, Reel and Landres, 1987) and planning guidelines from other countries and agencies such as the Australian Council of Federal and State Nature Conservation Ministers (CONCOM, 1986), Great Britain Countryside Commission (1989), ASEAN Expert Group on the Environment (1986), Government of Grenada and Organization of American State (1988), the International Union for Conservation on Nature and Natural Resources (Commission on National Parks and Protected Areas, 1986) and the Commonwealth of Virginia (The Virginia Outdoors Plan, 1984).

Recommended criteria for evaluation are:

1. The planning process should be simple and inexpensive to implement;
2. The planning process should be adaptable and appropriate to existing planning, management and decision-making processes of the Malaysian government;
3. The planning process should require and facilitate consideration of regional resource inter-relationships;
4. The planning process should avoid value judgement;
5. The planning process should be a rational comprehensive approach. It should require scientific analysis and utilize technical knowledge in the evaluation of alternatives and choices;

6. The planning process should provide consistent results when replicated in the same area by different people;
7. The planning process should have the capacity to consider a broad range of objectives;
8. The planning process should facilitate an evaluation of impacts of alternative park management proposals on economic, social and environmental outputs;
9. The planning process should facilitate public participation.

3.3 The Descriptions of Planning Criteria

Explanations of the planning criteria are provided below.

1. The planning process should be simple and inexpensive to implement.

The planning process is easy and simple if highly trained personnel from outside the department are not required to implement it. Instead, an easy and simple process can be described in a training manual, and existing staff can follow its guidelines (Ernest, 1986).

2. The planning process should be adaptable and appropriate to the existing planning, management and decision-making processes of the Malaysian government.

This criterion is one of the most important factors that determines the effectiveness and soundness of any planning process. This criterion can be best explained by stating that any new planning process should follow the current governmental decision making and planning processes. Modifications, if necessary, are permissible (Eidsvik, 1987), but should be kept to a minimum. The

present planning structure of the Malaysian government emphasizes the centralized planning approach. In this case, the federal government has the power under the Malaysian constitution to develop and implement the resource plans for the benefit of the nation and its people. All management plans which are developed by federal agencies of Malaysia reflect a centralized, top-down decision making process. The management plans follow guidelines and procedures formulated for achieving the Malaysian New Economic Policies (NEP) and broad environmental and natural resource management policies. Under these guidelines and procedures, all natural resource agencies are required to carry out and submit an environmental impact assessment along with the proposed management plans.

3. The planning process should require and facilitate consideration of regional resource inter-relationships.

The planning process should operate within the regional context within which the park is found. A national park area must be integrated as an essential element into the regional land-use pattern and development (U.S Department of Regional Development, 1984). This criterion calls for the planning team to review the potential effects of development outside the national park area border as well as the effects of the national park area on the region. A special arrangement may be required to create buffers to protect parks from adjacent landowners and resource uses (ASEAN Expert Group on the Environment, 1986).

4. The planning process should avoid value judgement.

Ideally, the best planning process would avoid the application of any value judgement, but this kind of planning process is hard to find and create. Since any planning process for parks must be workable, certain amounts of value judgement are likely. Subjective judgments must, however, be carefully made, kept to a minimum, and clearly noted. When value judgements in the planning process are made, the "rules of game" should be clearly identified; assumptions must be noted, and the effects of every judgment should be quantified.

The "Sum-of-Weighted-Factor" method is one way to quantify the effects of value judgments by the planning team as much as possible. The value of the weight points should be decided in advance by the planning team. The sum-of-factors method uses three steps to reduce the subjectivity of value judgments: (1) identification and selection of factors for which value judgment are made; factors may include judgments about recreation development, habitat protection, and historical and cultural values, (2) assignment of values for each factor on a 1-10 common scale, and (3) assignment of weights to each factor based on its relative importance in the assessment. By combining the products of the factor value and weight of each factor, the final score can be produced (Randolph, 1988).

5. The planning process should use a rational comprehensive approach. It should require scientific analysis and utilize technical knowledge in the evaluation of alternatives and choices.

This criterion calls for a rational comprehensive approach to the planning process. A rational comprehensive approach specifies steps in the planning process and relationships among the steps. Such steps might include: identify issues and objectives; gather and analyze information; formulate alternative designs, programs, and program policies to meet objectives, assess economic, environmental and social impacts of alternatives, and select plan, program, or project design. In addition, the rational planning approach follows a sequential procedure and should be developed in an iterative fashion in which planners are free to accept new information on issues, objectives, alternatives, and impacts throughout the process (Ortolano, 1976).

In order to achieve the rational planning approach, the planning process should be: (1) as free as possible from political, institutional, time and funding constraints when identifying alternatives, (2) permit as far as possible the independent analysis of objectives and alternatives, and (3) provide commitment to the view that all problems raised can likely be solved through technical and scientific solutions (Weber, 1973).

6. The planning process should provide consistent results when replicated in the same area by different people.

One important issue that must be considered when specific planning methodology is being developed is the element of consistency. By using the same planning process, two or more individuals should consistently make the same recommendations or provide the same results concerning a specific recreation area. Furthermore, the planning process should produce the same results for unchanging characteristics of the area when inventoried at a different point of time. Such characteristics of the planner as mood, age and personality should not be allowed to affect the evaluation process. Therefore, the outcomes of the recreational inventory and recommendation concerning the area should change only if the characteristics at the site or society's demands have changed significantly.

7. The planning process should consider a broad range of objectives.

A broad range of objectives is useful because national parks in Malaysia typically have many purposes. A range of objectives may include (1) facilitating outdoor recreation opportunities for the public and tourism, (2) maintaining genetic resources (flora and fauna), (3) facilitating education and research, and (4) supporting rural and regional development. In order to achieve these objectives, the planning process should facilitate consideration of the recreational opportunity potential of different types of resources or landscapes, the existence and the value of ecological diversity, the identification and objective analysis of threatened and endangered species and their required habitat, and assure that the total range of outdoor recreation opportunities is covered.

8. The planning process should facilitate the evaluation of impacts of alternative park management proposals on economic, social and environmental outputs.

The planning process should facilitate simultaneous consideration of the economic, social and natural environment by listing and presenting the inputs and outputs in terms relative to general na-

tional policies, general natural resources management policies, and national park policies. The analysis of the economic, social and natural environment must be realized along the general lines commonly utilized by project evaluation procedures in the existing planning offices. While there is considerable variation among methods employed by the various natural resources agencies, some general steps are common to all. To consider this, the planning team should lay out the representation of outputs and inputs in a systematic way. Where possible, the outputs and inputs are stated in both descriptive (qualitative) terms and also in financial (quantitative) terms. It is desirable to convert as many items as possible to monetary terms. However, if this is not possible, planners should describe inputs and outputs in descriptive terms which are meaningful to national development and conservation and objectives of the park.

There is also a need for accountability. For accountability purposes and for decision-making on the continuance, expansion, or curtailment of a management programs, it is important to consider costs in relation to benefits, and to compare an intervention's cost-efficiency to that of alternative resource allocation strategies. Finally, an evaluation should show the extent to which a proposed management program in a national park area causes changes in the desired direction in target economic, social and the environmental conditions (Rossi and Freeman, 1986).

9. The planning process should facilitate public participation.

As the planning process becomes institutionalized, public participation is needed to give planning the quality of "due process" demanded of rational administrative decision making. Public participation means the involvement in the planning process of all the individuals, interest groups, organizations, and communities who might be affected by the outcomes (Manning, 1985). Thus, public participation means direct interaction, in the context of developing, reviewing, and adopting plans and proposals, between the planners and responsible officers and the affected citizens themselves.

4.0 CHAPTER 4: DESCRIPTIONS OF RECREATION RESOURCE PLANNING PROCESSES

This chapter provides the descriptions of the recreation planning processes from many natural resources agencies. These include the United States Forest Service and Park Service, Parks Canada, and planning proposals for Latin America and ASEAN (Association of Southeast Asia Nations).

4.1 The Recreation Opportunity Spectrum (ROS) and the Limits of Acceptable Change (LAC) Planning Framework of the U.S Forest Service

In this section, a description is provided of the ROS and LAC planning concepts that are used by the USDA Forest Service to plan and manage recreational opportunities on the national forests. A rationale and description of ROS are first provided, and then ROS is placed within the LAC planning framework.

In planning and managing national forests with their multiple use mandates, population trends make several factors appear likely. Increasing population has produced greater demands on forest lands, and these demands will continue to grow. As demand for economic and non-economic forest uses increases, the levels of conflicts will certainly grow. Therefore, national forests will need an increased level of management presence.

Planning and managing recreation on Forest Service lands is a difficult task because of these numerous and conflicting demands from the public. It is made more complex by the rapid and unpredictable changes in the nature of recreation demand. Recreation uses will continue to grow and will remain one of the principal services provided by the national forests (U.S. Department of Agriculture, Forest Service, 1986).

The National Forest Management Act of 1969 has mandated that the Forest Service supplant traditional planning programs with planning processes that recognize the interdependent nature of the forest resource systems and their many products. One such strategy used in recreation planning and management is the Recreation Opportunity Spectrum (ROS) planning framework (U.S. Department of Agriculture, Forest Service, 1986).

4.1.1 The Recreation Opportunity Spectrum (ROS)

The main purpose of ROS is to provide a diversity of recreation opportunity. A recreation opportunity is a chance for an individual to participate or engage in a specific recreational activity within a specific environmental setting to realize a predictable recreation experience.

The ROS is a planning framework that views recreation as a behaviorally based production process, with three distinctive aspects of demand that must be considered. First, visitors seek opportunities to participate in certain activities. Second, there is demand for setting opportunities, where visitors can engage in their desired activities. The last dimension of recreation demand refers to visitors' preferences for experience opportunities (see Figure 5).

The Recreation Opportunity Spectrum provides a spectrum for stratifying and defining classes of outdoor recreation environments, activities, and opportunities along a spectrum or continuum divided into six classes or types of experiences. These classes are:

1. Primitive

Recreation land class is characterized by an essentially unmodified environment of fairly large size. Interaction among users is very low, and evidence of other users is minimal. The area is managed to be essentially free of human induced restrictions and controls. Motorized use within the area is not permitted.

2. Semi-Primitive Non-Motorized

Recreation land class is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that a minimum of site controls and restrictions may be present, but they are subtle. Motorized use is not permitted.

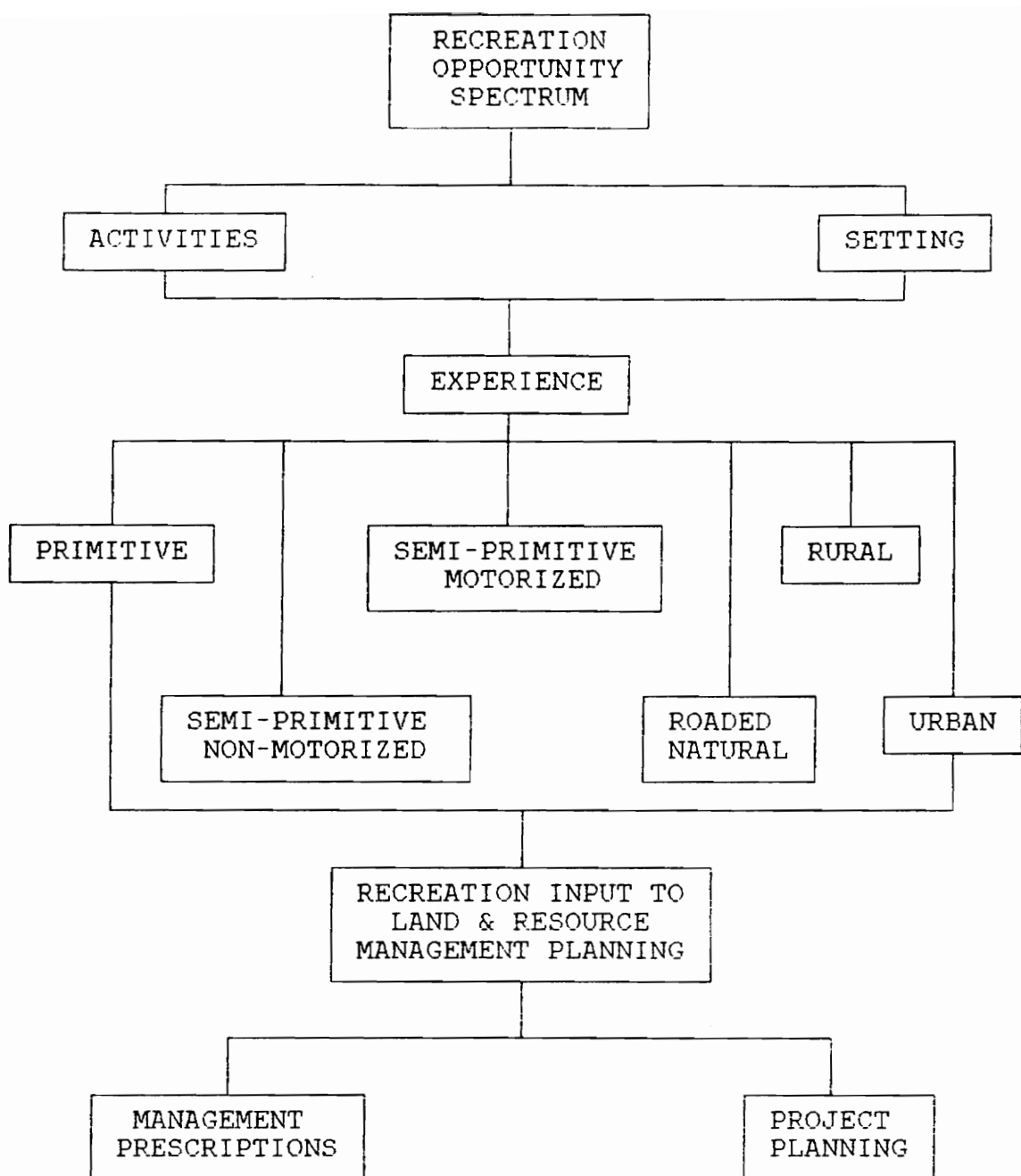


Figure 5. Recreation Opportunity Spectrum (ROS)-U.S. Department of Agriculture, Forest Service (1986).

3. Semi-Primitive Motorized

Recreation land class is characterized by predominantly natural or natural-appearing environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site restriction or control may be present, but there is subtle. Motorized use is permitted.

4. Roded Natural

Recreation land class is characterized by predominantly natural appearing environments with moderate evidence of the sights and sounds of man. Such evidence usually harmonizes with the natural environment. Interaction between users may be low to moderate, but evidence of other users is prevalent. Resource modification and utilization practices are evident, but they harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.

5. Rural

Recreation land class is characterized by a substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evidence, and interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities for motorized use and parking are available.

6. Urban

Recreation land class is characterized by a substantially urbanized environment, although the background may be natural-appearing. Resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans are predominant on-site. Large number of users can be expected, both

on-site and in nearby areas. Facilities for high motor use and parking are available, often with some form of mass transit available to carry people throughout the site.

Opportunities for experiences along the spectrum represent a range from a very high probability of solitude, self-reliance, challenge, and risk to a very social experience where self-reliance, challenge, and risk are relatively unimportant. The Forest Service has focused its attention on specifying indicators of physical, social, and managerial settings that define each class. Recommended indicators are as follows: remoteness, size of area, evidence of humans, social setting, and managerial setting.

In order to assure a diversity and appropriate combination of ROS class to meet diverse user needs, the Forest Service uses the following guidelines to make land allocation decisions: 1) the relative availability of existing recreation opportunities, 2) their reproducibility, and 3) their spatial distribution.

1. Relative availability

This guideline addresses the issue of supply as well as the appropriate role of the recreation supplier. Adequacy of supply is a function of, among other things, demand for specific recreational opportunities and the spatial distribution of opportunities. Relative availability is usually determined within a regional framework that extends beyond agency boundaries. When one type of opportunity is abundant, it may be necessary for the agency to alter the setting and provide alternative opportunities of another ROS class.

2. Reproducibility

The criterion addresses the question of the extent to which an opportunity can be technologically reproduced. Opportunities of the modern or developed end of the spectrum are generally more reproducible (capable of creation through use of technology) than those at the primitive end. The obvious implication is that decisions transferring an area from a primitive condition to something

more developed need to be carefully weighed because of the relative inability to reverse such decision.

3. Spatial Distribution

In planning and managing large areas, the Forest Service purposely avoids creating sharply dissimilar opportunities adjacent to each other. The purpose of doing this is to reduce the likelihood that impacts from one opportunity will “spill over” onto an adjacent opportunity (eg., noise from an area catering to outdoor recreational vehicle users reaching an adjacent area managed for primitive opportunities). Also, areas are managed to avoid unwarranted duplication of ROS opportunities in close proximity to each other (Stankey et al. 1985).

4.1.2 The Limits of Acceptable Change (LAC)

The Limits of Acceptable Change (LAC) planning framework has been developed in response to the need of managers for a means of coping with increasing use demands and impacts on recreational areas. The LAC represents a reformulation of the recreational carrying capacity concept, with the primary emphasis on the conditions desired in the area rather than how much use an area can tolerate. Thus, the LAC emphasizes the management of recreational impacts and explicitly requires a statement of objectives.

The LAC process requires consideration of four major areas: (1) the specification of acceptable and achievable resource and social conditions that are measurable; (2) an analysis of existing conditions and those judged acceptable; (3) identification of management actions necessary to achieve these conditions; and (4) a program of monitoring and evaluation (Stankey et al. 1984).

The LAC planning process consists of nine steps. These are briefly described as follows:

1. Identify area issues and concerns

The purposes of this step are to identify features and locations of concern, to provide a basis for the establishment of management objectives, and to guide the allocation of land to different opportunity classes. A planning team identifies issues raised during public involvement and is also responsible for identifying concerns raised by the managers and decision makers. In analyzing the issues and concerns, the planning team considers how the area can play its role in a larger regional and national setting. At the end of step # 1, a clear summary of unique value and special opportunities of the area are prepared.

2. Define and describe recreation opportunity classes

The purpose of this step is to facilitate the provision and maintenance of a range of recreational opportunities within and across areas. This is done by describing recreation opportunity classes such as defined earlier in the ROS land classification scheme. During step 2 the planning team reviews information collected during step 1 concerning area issues and problems. These issues and concerns will shape both the range and definition of possible recreation classes considered.

3. Select indicators of resource and social conditions

The purposes of step 3 are to identify specific indicators to guide the inventory process, the recommendation of ROS class allocation, and to provide a basis for identifying where and what management actions are needed. In the process of selecting indicators, four criteria have been used. The criteria include:

- a. The indicator should be capable of being measured in cost-effective ways at acceptable levels of accuracy.
- b. The condition of the indicator should reflect some relationships to the amount and type of use occurring at the site.

- c. Social indicators should be related to user concerns.
- d. If possible, the condition of the indicator should be responsive to management control.

The Forest Service has typically used the following indicators:

- a. Remoteness

Remoteness means away from the sights and sounds of humans. It is as an indicator of the opportunity to experience greater or lesser amounts of social interaction, and primitive to urban influences, as one moves across the ROS spectrum.

- b. Size of Area

The size of the area is used as an indicator of the opportunity to experience self sufficiency, solitude, challenge, and risk and is related to the sense of vastness of relatively undeveloped areas.

- c. Evidence of Humans

Evidence of humans is an indicator of the opportunity to recreate in environmental settings under various degree of human influence or modification. As examples, for a primitive ROS class, setting is essentially an unmodified natural environment. Evidence of humans would be unnoticed by an observer wandering through the area. For a Semi-Primitive Non-Motorized ROS class, the natural setting may have subtle modification that would be noticed but not draw the attention of an observer wandering through the area.

- d. Social Setting

Social setting is related to the amount and type of contact between individuals or groups. Examples of indicators of concern might be encounters with parties on trails or at the campsite.

e. Managerial setting

The managerial setting reflects the amount and kind of restrictions imposed on people's action by the agencies. This is an especially important criteria because it begins to establish rules and guidelines for what can be done to achieve resource and social conditions.

Other possible examples of indicators are trail conditions, size of wildlife populations, solitude, noise and condition of campsites. Finally, the planning team should make sure that resource and social indicators are quantifiable.

4. Inventory existing resource and social conditions

The purposes of this step are to: (1) determine the range of existing conditions which helps to establish meaningful standards, (2) help in decisions on allocations of land to different opportunity classes, (3) and know where and what management actions will be needed.

The inventory on the existing resource and social conditions is guided by indicators selected in step # 3. It must be conducted in an objective and systematic way. All information on the area is typically recorded directly onto a base map (U.S. Department of Agriculture, Forest Service, 1986).

5. Specify standards for resource and social indicators for each opportunity class

The purpose of step # 5 is to provide a quantitative criteria or standard for what is acceptable for each indicator in each opportunity class. This makes it possible to evaluate where and what management actions are needed by permitting comparison of existing conditions with those deemed acceptable.

Data in step # 4 are important for specifying realistic standards. Setting standards is a judgmental process, but the process is logical and subject to public review. These guidelines have often been used for establishing standards:

- a. The standards should relate to descriptions of resource, social and managerial variables of the ROS classes.

The qualitative descriptions described in step # 2 facilitate the planning team in specifying the standards for the kinds of conditions characterizing each opportunity class.

- b. The standards should describe a range of conditions

The standards should describe a logical progression or gradation of conditions relative to a particular indicator across the range of ROS classes.

- c. The standards should reflect the present situation.

Often, standards are best expressed in terms of probabilities that are suitable for a particular ROS class, (e.g, a standard for the Primitive zone might be "a maximum of two groups encountered per day on at least 95 % of the days during the use period").

At the end of step # 5, a table of specific (quantified if possible) measures of acceptable conditions for each indicator in each opportunity class is prepared.

6. Identify alternative opportunity class allocations

The purposes of step # 6 are to identify various combinations of resource, social and managerial conditions that might be provided in different parts of the recreational area, and begin to provide alternatives for public review and evaluation. On a given piece of land, it likely that more than one opportunity class and more than one combination of opportunity classes could be proposed and drawn on a map.

Step # 6 actually involves: (1) an analysis and review of information from area issues and concerns in step # 1, (2) a review of information in step # 2 about ROS class descriptions, and (3) a review of information obtained on each indicator in step # 4 (the inventory phase).

7. Identify management actions for each alternative

The purposes of step # 7 are to evaluate the benefits and costs of specific management action needed to implement each alternative. This is done by reviewing the managerial condition requirements of each ROS opportunity class description and defining appropriate actions. This is done by analyzing the differences between existing conditions and those defined as acceptable by the standards. Once differences are identified and understood, management actions for upgrading existing conditions in line with standards can be selected. The planning team usually makes a list or map of all places where existing conditions are below standard.

8. Evaluate and select a preferred alternative

The purpose of step # 8 is to finalize opportunity class allocations and to select specific management actions to achieve this allocation. The selection of a preferred alternative is governed by analyzing resource, social, and managerial costs, and comparing them to resource and social benefits to the various clientele groups who receive them. Since the LAC focuses on desired conditions, public participation plays an important role in selecting a final alternative.

9. Implement actions and monitor conditions

There are two purposes of step # 9. The first is to implement a management program to achieve the objectives of the selected alternative. The second is to provide periodic, systematic feedback regarding the performance of the management program. To accomplish monitoring, the planning team repeats step # 4 and step # 8 to inventory the condition of indicators and to compare indicator conditions with standards (but only for the implemented alternative).

At the end of this step, the planning team submits a summary of existing conditions and standards for all indicators in all ROS opportunity classes of the recreation area under review. In addition, recommendations for improvements or changes in the management program are included as necessary (Stankey et al. 1985).

4.2 United States National Park Service General

Management Planning

The National Park Service of the United States develops comprehensive plans to guide development and management and solve problems in national parks. The purpose of this section of the paper is to review the national park planning process that results in the development of a General Management Plan (GMP) for each national park.

4.2.1 Statement for management

Before a general management plan for the park is formulated, a Statement for Management (SFM) is first prepared. The document is put together by the superintendent and then evaluated every two years, and is revised as necessary. This document provides an up-to-date inventory of the park's condition and analysis of its problems. The SFM provides an assessment of existing conditions; this assessment forms the basis for establishing park management objectives, identifies major issues and problems that need to be addressed, and determines information needs. It is the first step in the park planning process.

Park management objectives developed in the SFM describe the conditions that need to be achieved to realize the park's purpose. However, this document does not contain decisions or prescribe solutions for how to reach these conditions; the means to this end is left for the rest of the planning process. At this early stage of planning, the goal is simply to bring together information about the park's purpose, the significance of its resources, the existing uses of its lands and water, the legislative and administrative constraints on its management, the influences of the public on park resources, and the experience of park visitors. The primary point of this information gathering is to identify major issues that need to be resolved. This definition of issues is critical to all future planning and management efforts.

The SFM document also plays an important role in the planning process because it helps the superintendent determine what studies, plans and designs will be needed. Preparation of the SFM leads directly to the development of the plans and tasks that must be done to resolve the problem issues, and what kind of information is necessary to achieve objectives. This "outline of planning requirements" is a priority listing of the studies and surveys needed to provide the information base for planning and project designs needed for the park. It also serves a budgetary function in that it serves as a basis for funding requests to accomplish necessary projects during the next five years. Each park superintendent is responsible for keeping the outline current on a yearly basis (U.S. Department of Interior, National Park Service, 1982).

In summary, the SFM provides an up-to-date inventory of the park's condition and an analysis of its problem issues. It does not involve any prescriptive decisions on future management and use of the park, but it provides a format for evaluating conditions and identifying major issues and information voids. The general management plan guides development and management to solve these problems.

4.2.2 General management planning process

A General Management Plan sets forth a basic philosophy for the park and formulates strategies for resolving issues and achieving identified management objectives, usually within a 10-year time frame. Strategies presented in the GMP are those required for resource management and visitor use. Based on these strategies, any necessary physical development for efficient park operation, protection, and use is identified. The assessment of the environmental impacts and other required compliance documentation are included in the document.

General management planning is conducted by an interdisciplinary team, consisting of the park superintendent and selected staff and other regional officers. Team members have expertise in park management, park planning, environmental design arts, natural and/or cultural resources, concessions management, and interpretation. This core team is supplemented as needed by personnel with expertise in fields such as safety, economics, sociology, energy conservation, geology, hydrology, forestry, wildlife management, air and water quality, transportation, and law.

The general management planning process of national park areas is comprehensive, and it includes either an environmental assessment (EA) or an environmental impact statement (EIS). These assessments evaluate the environmental implications of recommended projects.

There are five phases of planning, starting from the critical analysis of planning issues and ending with the approval of the final GMP.

Phase I: Issue Analysis

The first stage of planning begins at the task directive stage. It includes a through discussion between the planning team, regional planning coordinator, and superintendent on the park's purpose and objectives and the issues and factors of concern. The background information for this dis-

cussion is found in the Statement for Management. The purpose of the discussion is to assure that the issues are still valid, complete, and correctly stated, and that their significance and ramifications are understood by the planning team. The issues are written with sufficient clarity so that alternative solutions can begin to be identified, and information needed to deal with alternatives can be identified and readily understood.

Phase II: Development of Alternatives

The second phase is the identification of possible alternatives for addressing and solving the planning issues. During this stage, the alternatives may be modified as information is developed. Necessary contacts and consultation with government officials and affected public are included in this phase. Toward the end of this phase, a decision is made on whether the GMP will be combined with an EA or an EIS. If an EIS is anticipated, a notice of intent will be prepared in response to the Council of Environmental Quality (CEQ)1508-22 requirement.

The planning process for every GMP must address three groups of alternatives for the issues being considered. These are no action alternative (may be called continuation of existing conditions), minimum requirement alternatives, and a full range of other reasonable alternatives. The evaluation of alternatives is done using cost-effective methods. The costs are compared to benefits of each alternatives. But benefits are not measured in monetary terms. Instead, they are measured by how effectively they respond to park objectives. The development of alternatives begins with a "no action" alternative to determine the impacts of continuing the present course of action. The no action alternative will typically not be the Park Service's proposal at the draft stage. The minimum requirements alternative or other reasonable alternatives may become the Park Service's proposal at the draft GMP stage. The minimum requirements alternative describes the minimum actions required for effective park management, or for the minimum actions and developments needed to make a new or undeveloped park operational in a way that provides, consistent with its purpose, for primary visitor use and protection of park resources.

Other reasonable alternatives should address actions, consistent with laws and Park Service policy, necessary to meet parks objectives for visitor use and resource protection, including accommodation and resource management. These alternatives should not be simply additive but should consider, where reasonable, distinct management approaches.

Phase III: Alternatives Document for Public Involvement

The purpose of this phase is to gather input from the public and other agencies on the Park's Service issues and alternatives and on other alternatives that the public may recommend to the Park Service. The planning team also assures that all affected elected officials, federal, state, and local agencies, and Indian tribes are also consulted.

A draft GMP environmental document consists of debated planning issues and problems that were identified in the SFM and their analysis in Phases 1 and 2. The planning team should ascertain whether public involvement is required based on whether:

1. The issues and alternatives are likely to be controversial;
2. The interested public and other interested officials have been kept aware of and are in general agreement on the nature of the issues and their possible solutions;
3. The alternatives significantly affect the social and economic life of nearby communities or otherwise impact them;
4. User groups may be curtailed in their use of the park or new uses permitted which may be controversial;
5. The alternatives contain proposals for boundary adjustments or otherwise directly affect land-use regulation in the area adjacent to the park;

6. Large cost are likely to be involved; and
7. Important resource protection or resource use issues are at stake.

If issues of the plan are primarily within the park concerns such as repair, maintenance, and resource management, than phase III could be omitted. However, if reasonable doubts exist, or if public involvement is desired, phase III should not be omitted. Phase III requires the preparation of a brief public involvement document that contains the park purpose and the issues the plan is to address. The document also contains a concise and descriptive summary of the alternatives.

Phase IV: Preparation of Draft GMP/Environment Document.

At this phase, the planning process calls for careful analysis of the range of attitudes and views held on the possible alternatives. The team should determine if:

1. additional formal or informal meetings or discussions are needed with other public officials, user groups, organizations and the general citizenry;
2. additional information is required to prepare the GMP proposal or alternatives; and
3. new issues or alternatives should be developed or existing ones restructured.

The cost for the proposed GMP is prepared, and it should reflect the size and composition of the park staff's support facilities. Once this is done, the superintendent and regional director will select a proposal (or set of proposals) for dealing with the issues. The draft plan may then be prepared. After the draft plan is prepared, it receives internal review in the park, region, Washington office, and (when combined with an EIS) the appropriate solicitor's office. Regional directors are responsible for determining that the plan is consistent with policy, applicable laws and regulations, commitments, compliance requirements, and special considerations.

The Washington office of the National Park Service must provide an affirmative EIS clearance for the purposes of the Environmental Protection Act (EPA). The Washington office of the National Park Service also serves the regional director in an advisory capacity to:

1. provide planning guidance on national policies and administration;
2. review the plan for broad policy compliance;
3. assure that all planning proposals are well conceived, cost-effective and meets budgetary goals; and
4. critique the planning process for its effectiveness and modifications of present procedures and guidelines.

The regional director then send copies of the draft plan to the affected members of Congress, the governor, state and local elected officials, affected federal, state, and local agencies, and individuals and organizations requesting the plan. Normally, informal discussion with affected parties is conducted during the review period. The purpose of these interchanges is to allow reviewers to express their views on the plan and allow the Park Service to explain the rationale for proposed actions.

Phase V: Preparation and Approval of the Plan.

Upon the closure of the review period, the team makes any necessary changes in the plan. If the changes are beyond the scope of the alternatives, Park Service will again make the plan available to the public to gain their views.

The process of preparing the final plan differs between a general management plan/environmental assessment and a general management plan/environmental impact statement. If the general management plan has been combined with an environmental assessment, the regional director makes a judgment on the plan's merit based on the review of comments. If an environmental impact state-

ment is required for the final plan, the regional director places a notice of intent in the Federal Register, and the team begins to convert the GMP/EA into a draft GMP/EIS. If an EIS is not required, the regional director and superintendent determine what changes need to be made before its approval.

If the GMP has been combined with an EIS, the planning team summarizes the review comments and prepares a comment and response section for the appendix of the final GMP/EIS. Both the regional director and superintendent must agree on what changes are to be made in the proposed plan on the basis of review comments. Once these changes have been made, the combined document is sent to the Office of Park Planning and Environmental Compliance, WASO, for clearance to print. Then these documents are sent to affected parties. Once a GMP has been approved, the planning team should assist the superintendent and the regional staff in subsequent studies, plans, staffing and development to implement the plan (U.S Department of Interior, National Park Service, 1982).

4.3 Canadian National Park Planning Process

Canada's national park planning process was approved in October, 1978 for the purpose of improving the management of parks in Canada. The park management planning process which follows is applicable to all national park planning activities.

The basic principles of the process involve:

1. Integrated management programs and planning responsibilities;
2. A park management plan characterized by flexibility, park-wide coverage, and comprehensive treatment of information, issues, concepts and interrelationships;

3. Multi-disciplinary approach;
4. Public participation;
5. Broad environmental impact assessment;
6. Ministerial approval of the Park Management Plan and long term application; and
7. Continuity in plan preparation, implementation, evaluation, and plan review.

The decision making process for the National Parks in Canada involves personnel from a very high level, e.g, the Minister, and to a low level, e.g, the park's technical staff. To facilitate this process, the planning efforts have been organized in such a way that all steps are completed in a rational fashion. The park management planning of Canada consists of three types: Corporate Planning, Systems Planning and Regional Program Planning (see Figure 6).

Corporate Program Planning sets direction for each of Parks Canada's development programs by regions of the country. It should consist of statements of long term strategies to ensure rational distribution of resources (manpowers and financial) on a national scale, and short term program priorities designed to meet overall governmental and program needs. Statements of these strategies form a framework within which all program activities take place. Corporate Program Planning is generally a national headquarters responsibility. The responsible members of Corporate Program Planning are the Head of Management Section, the Policy Advisor and the Programming Officer.

Systems Planning provides comprehensive plans leading to the establishment of parks, identification of possible future parks, and identification of the cultural and natural features of the regions. Systems Planning is required, in part, so that corporate program decisions may be made and priorities established on a national basis. Systems Planning will provide a set of statements of each national park's purpose within a national context, resource information to be used in park management planning, summary of conditions for management and planning, socio-economics studies, and as-

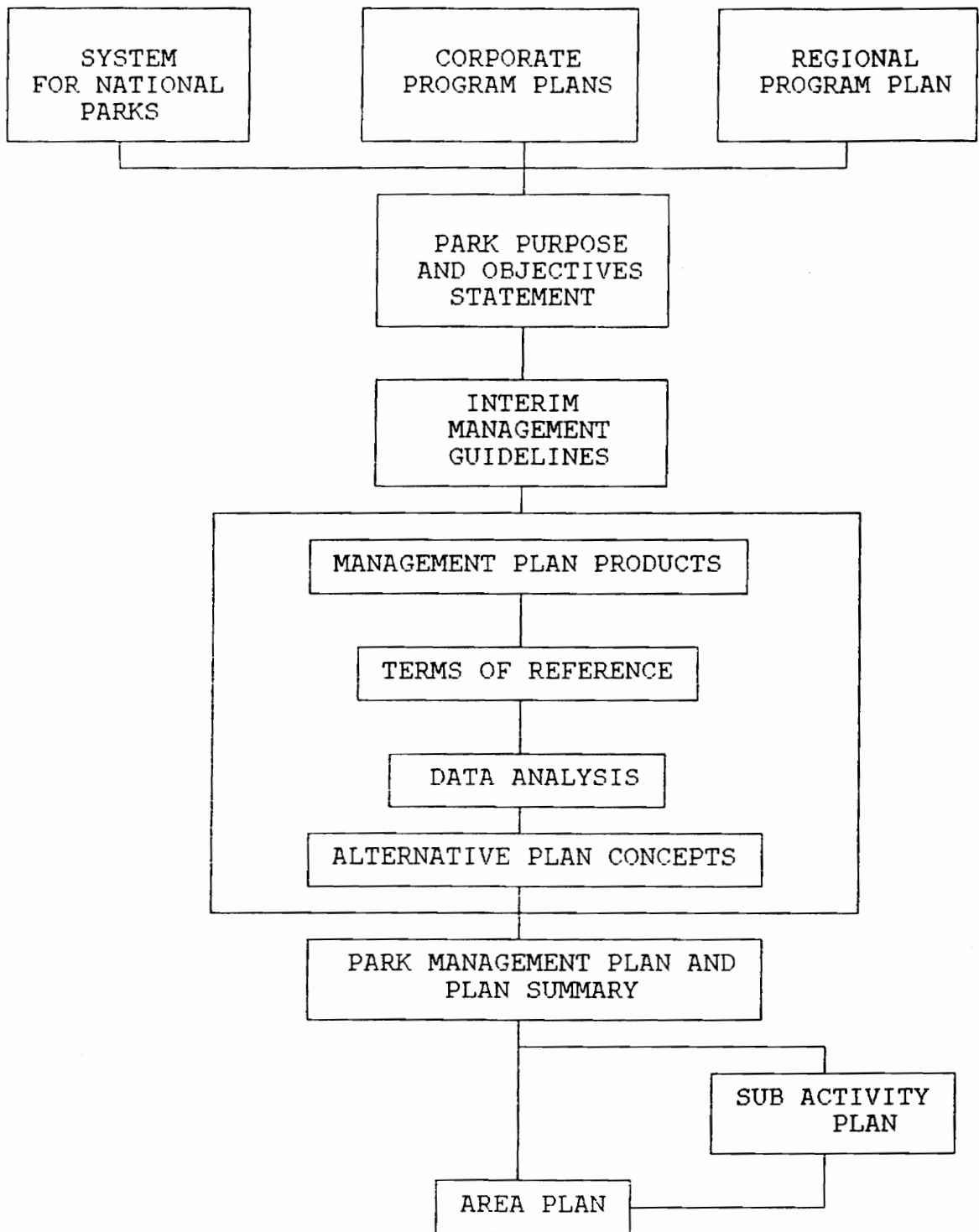


Figure 6. Canadian Park Management Planning Process - Canadian Parks Service (1985).

assessment of potential impacts on local regions. When Systems Planning has reached the point where park proposals have been formulated and the parks have been established, the planning process can be started. Major direction for the management planning process is given in the Park Purpose and Objectives Statement which is produced and approved under the Systems Planning process. The Director of the National Park Branch is responsible for Systems Planning. Approval of the systems plan and its integration with Corporate planning rests with the Assistant Deputy Minister of the Environment.

The last planning level is Regional Program Planning. Its function is to establish priorities and direction of each region and satisfy the broader requirements of Corporate Programs. The programs elements are parks and cultural and natural features. This level of planning emphasizes program elements on a regional basis, so that the priorities can be formulated and assigned for further actions. Priorities will be set among parks, sites, and national heritage areas.

4.3.1 Park Management Plan Components

The park purposes and objectives statement is determined by Systems Planning and approved by Assistant Deputy Minister of the Environment. The information for establishing the park purposes and objectives is based on the status of the present resources, socio-economic studies, and profiles of potential demand for parks that exists within the local regions. Once the park purpose and objectives statement has been approved by the Assistant Deputy Minister, the planning process involves the following outputs.

1. Interim management guidelines;
2. Terms of reference;
3. Data base analysis;
4. Alternative plan concept(s); and

5. Park management plan and plan summary.

4.3.1.1 Interim Management Guidelines.

Production of the Interim Management Guidelines is the responsibility of the Regional Chief of Planning. The work is carried out by a planning team which consists of the park superintendent and representatives from the Regional Headquarters. Interim Management Guidelines must be prepared to assist the superintendent of new and existing parks in managing the park's lands, resources, and visitor activities until a Park Management Plan is approved. The I.M.G. will be produced based on the available data during a period of six months before the planning process actually begins. It should be consistent with the Purpose and Objectives Statements prepared for the park. The I.M.G. typically address:

1. Park administration - appropriate use of volunteers, local employment, location of park facilities and staff accommodations.
2. Resource conservation - management of special protection areas, cultural resources management, restoration and rehabilitation programs, and enforcement of protective measures.
3. Visitor services and facilities - consideration of type of visitor activities, visitation season, recreational services, and visitor support services.
4. Interpretation - facilities and services for interpretation and extension program.
5. Research - research activities and data collection procedures within the park lands.
6. Property management - land acquisition, management of park property, direction for boundary demarcation and direction for general maintenance.
7. Special cases - for example, traditional rights of native people and collection of fees.

The I.M.G. will be used until the Park Management Plan is approved. The park superintendent is responsible to review and re-examine the guidelines each year in consultation with the Regional Chief of Planning, and finally both of them will approve the I.M.G. The Regional Director ensures

that copies of the I.M.G. are sent to the Director of National Parks Branch for information and review. The I.M.G will not be made available to the public until they have been reviewed by the National Parks Branch.

4.3.1.2 Terms of Reference for the Planning Program

The Regional Director and the Superintendent will initiate the formulation of the Terms of Reference for the planning process. The Chief of Planning is responsible for the production of the Terms of Reference. The Terms of Reference define the function and commitments for the planning team to carry out and to ensure the planning activities satisfy the approved Park Purpose and Objectives Statements. A comprehensive Terms of Reference for the Planning Program specifies and identifies the:

1. Policies, program context, initiatives and priorities as specified by corporate planning;
2. Objectives and priorities for the planning program;
3. Commitments made during the negotiations for the establishment of the park;
4. Nature of and time frame for the planning program;
5. Key management review and decision points;
6. Nature and level of remaining data collection, research and analysis activities.
7. Level and types of public involvement;
8. Guidelines of the role of volunteers, cooperating associations and private enterprise in the implementation of the plans;

9. Financial guidelines for possible developments or changes in operations;
10. Planning project manager, composition of the planning team, and their responsibilities and authorities;
11. Staff and financial resources;
12. Environmental assessment requirements; and
13. Guidelines relative to the formulation of regional integration strategies. It should take into account the impact of the park on the region and that of the region on the park.

4.3.1.3 Data Base Analysis

The responsibility for the data base and its analysis rests with the Planning Team leader in collaboration with team members and the regional director. The Regional Chief of Planning then will review each requirement of the Interim Management Guideline (I.M.G) and confirm the adequacy of the data base.

The data base can be categorized under broad topics such as park resources, legislation and policies, national and regional relationships, regional socio-economic information, and public uses, wants and needs. Within the context of such topics, information is required on natural and cultural resources, resource sensitivities, socio-economic characteristics of visitors, visitor activities and recreational patterns, interpretation opportunities, land use relationships, policies and park operations, and results of public consultations.

The analysis of information on visitor activities should establish expected levels of visitation as needed for planning and management decisions. Socio-economic analysis should assist the above work and establish the expected economic contribution of a park to the economy of the local re-

gion. The sources of information/methods used to provide the information include surveys, analysis of on-going data collected by parks, and secondary data from federal/provincial sources. Since this information is needed in the Data Base and Analysis stage of the planning process, the surveys are to be completed the year before the park planning process begins. Also, existing park information must have been compiled and be ready for analysis.

The analysis of the data base may indicate the need for additions to, or refinement of, both the Park Purpose and Objectives Statement and the Terms of Reference for the Planning Program.

4.3.1.4 Alternative Plan Concept(s)

After the data base is established and analysis of this data is done, the planning activity focuses on synthesizing the various data so that the interrelationships among each is known. Synthesis is often accomplished by matrix tabulations. The purpose of the analysis is twofold. First, the information should help develop and compare different alternatives. The second important component of the analysis is the assessment of short and long term positive and negative impacts of the proposals on the social and economic environment.

Through this process of synthesis, Alternative Plan Concept(s) will be developed. The Alternative Plan Concept is intended to provide park managers and the public with a range of options which express different intensities of management of resources and uses.

During the synthesis process, the zoning system for the national park is developed. Within the zoning system, there are five classes or zones. These include:

1. Zone I - Special preservation
2. Zone II - Wilderness
3. Zone III - Natural environment

4. Zone IV - Recreation
5. Zone V - Park Service

Each zone is described by three factors. First is the zone's management objectives. It likely includes resource preservation and public use objectives. Second is a description of the management implications of each zone. In this section, the planning team describes specific resource management techniques for each zone. The management requirements are determined by the inherent nature and state of the resource, combined with the management objective(s) that have been set. The last factor is a benchmark example of each zone. For example, zone I - special preservation is divided into five benchmark categories. These include unique, rare, endangered, and representative features and significant cultural resources.

The Alternative Plan Concept(s) document will include sufficient information in map and written form to enable the public reviewers and other affected parties to understand the results of the previous analysis and synthesis, and the implications of the alternative concepts.

When the Alternative Plan Concepts are suspected to contain "significant" environmental impact, the environmental impact assessment will be presented to the public at the same time as the Alternative Plan Concept(s).

4.3.1.5 The Park Management Plan

Production of the Park Management Plan is the stage where broad proposals are refined and alternatives are selected or discarded. The Park Management Plan is a statement of objectives and the means and strategies for achieving them stated in a broad but comprehensive manner. This plan must be approved by the Minister of the Environment. This is a major product of the planning process and follows public discussion of the Alternative Plan Concept(s).

The park management plan begins with the park concept which sets the proposed developments within the context of the characteristics of the park. It describes general areas of special preservation, wilderness, natural environments, recreation and park service administration facilities. Then, a broadly defined set of implementation priorities and requirements is prepared. In setting the implementation priorities, the cost-benefit analysis and other cost-effectiveness studies will govern and help the decisionmakers decide among options.

The final draft of the Park Management Plan describes the park's regional integration. First, it describes natural, human and land-use factors which may contribute to the character of the region and the activities of Government or public sectors in the context of land-use changes in the region. Second, it describes the role of the park in the region in relation to the historical and cultural infrastructure, and the impact of the park upon the local economy, natural environment, and resource use within the region. Third, it includes analysis of the park-region inter-relationship. Lastly, it will provide a summary of the development strategies for the park originated from the park-region meetings. These strategies will be reflected in the Park Management Plan by prioritized recommendations. When the Park Management Plan is approved by the Minister of the Environment, the implementation stage begins.

The Park Management Plan should be subjected to further public involvement prior to its submission for approval, if it contains proposals which are contentious and significantly at variance with the Alternative Plan Concept(s). Following its approval by the Minister, the plan summary, as a public document, contains the proposals and decisions regarding a park.

4.3.1.6 Annual and Formal Review

The Park Management Plan and subsequent activities related to it is evaluated and monitored so that the Park Management Plan remains valid. This is accomplished through two types of review, the Annual Review and the Formal Review which is normally carried out every five years.

1. Annual Review

The responsibility for evaluation and review on an annual basis is that of the superintendent in cooperation with the Chief of Planning . By the end of each financial year, the superintendent will prepare an Annual Review Report which is the result of:

- reviewing previous annual reports.
- reviewing policy goals of the organization to identify their impact on the park and its management plan.
- identifying significant changes in the resource base of the park.
- identifying new or previously unforeseen issues relating to the nature, patterns, and level of use and the visitor.
- identifying new information from monitoring programs
- recognizing public comments and concerns.

The Annual Review Report will be submitted for the consideration of the Regional Director. It will summarize the results of the annual review and, when necessary, make recommendations for plan amendment.

2. Formal Review

A Formal Review of the management plan normally takes place at five year intervals. The Regional Director of Management Planning will initiate the formal review of the management plan.

In undertaking a formal review, the following factors should be considered:

- Previous annual and or formal review reports to determine variations from the park management plan.
- Organizational policies, goals and objectives.
- Future resource allocations and priorities in terms of their anticipated impact on the management plan.
- New and updated socio-economic analysis and forecasts affecting future park use, patterns of land use, services, activities and facilities.
- Changes in the relationships between levels of governments and departments, which have repercussions and influences on the park.

If no amendments are necessary as a result of the formal review, the Formal Review Report and the Annual Review Reports will be kept with the management plan and used for reference during the next formal review. If amendments to Park Management Plan are necessary, the amendment procedure is as follows:

1. Produce Terms of Reference for amending the Park Management Plan. This includes a strategy for public consultation.
2. Outline issues and proposals for presentation to the public.
3. Discuss issues and proposals with the public
4. Produce a companion document or replacement document for the outdated Park Management Plan.
5. Submit the companion document or replacement Park Management Plan to the Director General of the National Parks for review and subsequent approval by the Minister of the Environment (Canadian Park Service, 1985).

4.4 Planning National Parks for Ecodevelopment in Latin America

This planning process was developed in 1987 by Dr. Kenton Miller, currently the Program Director at the World Resources Institute in Washington D.C. It was called "Planning Parks for Ecodevelopment". This planning process for Latin American national parks has a general goal of providing the greatest possible benefit to mankind. It also focuses upon those Latin American nations that are forging ahead with development programs which include the search for means to provide adequate stewardship for natural and cultural heritage and for the maintenance of the biosphere.

4.4.1 The Planning Process

The suggested planning approach for national parks has two objectives: (1) to provide guidelines for planning the management and development of specific resources in particular park areas, and (2) to provide guidelines by which the planning process can become a normal function of a national park department.

The suggested planning process for Latin America is a fundamental planning model. There are three phases which are sub-divided into fourteen steps.

Phase one: Preparation of Plan.

1. Gather basic information and background;
2. Inventory the area in the field;

3. Analyze the limitations and constraints;
4. State the objectives of the park;
5. Divide the area into management zones;
6. Draft the boundaries for the area;
7. Design the management programs;
8. Prepare the integrated development program;
9. Analyze and evaluate the plan;
10. Design the development schedule;

Phase two: Publication and Distribution of the Plan.

1. Publish and distribute the management plan;

Phase three: Implementation of the Plan.

1. Implement the plan;
2. Analyze and evaluate the results;
3. Gather feedback and revise the plan (replan).

Each of the fourteen steps is related and dependent upon all other steps. What affects one step will affect others in one way or another. When problems arise, the team may retrace its steps and re-work previous decisions.

To better understand the suggested planning process for Latin America, each step in the process is reviewed.

Step 1: Gather Basic Information and Background.

The search for basic information and background is divided into nine parts:

- Write down the objectives for the park;
- Gather descriptive information on the park area (includes biophysical features, cultural features and socio-economic features);
- Gather topographic information and prepare the BASE MAP of the park;
- Analyze the use of the park area;
- Explain the factors which require urgent attention in the park (list those items which require urgent attention such as flooding, endangered species and recreation pressure);
- Estimate the cost of construction in the area;
- Review budget status of the department and prospects for the park;
- Review the personnel status of the department and prospects for the park;
- Analyze the administrative, organizational, legal and political context for the new park.

The park planning process begins with a thorough review of knowledge about the area and of the factors which will affect the planning of the park. This information also supports the preparation of a BASE MAP which should be ready for the planning team leader.

Base on the information gathered and organized during step 1, the planning team is now ready to go to the field.

Step 2: Inventory the Area in the Field.

The second step requires some field work to gather new information, check and update existing data and to review existing data from a new perspective. Generally, a review consists of a

- survey of the natural and cultural resources of the area;
- survey of the land use and development aspects of the area;
- consideration of the features of national and regional development plans on the existing landscape (to note economic pressures, hunting, pollution, or other effects);
- review and mapping of sites which warrant classification as critical areas.

Particular attention is given to critical areas such as unique natural phenomena, sites of poor drainage, and endangered species and their habitats.

Step 3: Analyze the Limitations and Constraints.

With the background information taken from step 1, now combined with realities found in step 2, the team is prepared to discuss the limitations and constraints which should influence the park planning process.

What needs to be done here is to list the Facts and Assumptions which are thought to act as limitations and constraints upon the planning area. The Facts generally consist of physical characteristics which limit or constrain the options for planning. The Assumptions should be made, and they must be related to limitations and constraints. For example, assumptions can be made concerning policies on land use and on trends of demand for timber, water or recreation. The planning team then discusses all the Facts and the Assumptions which are most relevant to the planning process. Finally, the planning team considers the implication of each Fact and Assumption upon the planning of the park.

Step 4: State the Objectives of the Park.

The steps 1, 2 and 3 have given the basis by which the planners can now consider in greater detail the role and potential benefits of the park. In step 1, general statements of objectives for the parks were made to guide the initial gathering of information. With the information that exists at the end of step 3, the planning process proceeds to specify and refine the objectives of the park in greater detail.

The park must be managed to meet specific objectives. Examples might be to maintain a representative sample of major biological units as functioning ecosystems in perpetuity, maintain the genetic resources, provide educational services, provide recreational services, and support rural development through tourism based on outstanding scenery. The objectives should be written in such a way that they can guide management decisions and permit evaluation of management decisions.

Step 5: Divide the Area into Management Zones.

After the characteristics of resources, the limitations of those resources and their use, and the objectives to which the resources are to be managed are known, the planning team proceeds to a most important decision -- zoning. The park area is sub-divided into zones, where sectors of the park are managed with similar practices to meet particular objectives of the park. The zoning proposal is developed in the following manner:

- Identify areas where the natural and cultural resources permit meeting individual park objectives. Such areas might include:
 - representative samples of biological provinces;
 - the ecological transition;
 - places of rare species and their habitat;
 - places of cultural heritage;

- areas particularly suitable for education, interpretation, research, and monitoring;
 - areas of outstanding scenic beauty;
 - areas of particular potential for recreation and tourism;
 - areas particularly suited to rural development;
 - watersheds of particular relevance to water production in the region; and
 - the areas susceptible to, or already in, accelerated erosion.
- Sketch each of these ten particular areas, sites, or points onto a clean base map, to be called a PRELIMINARY ZONE MAP.
- Among the areas, sites, or points, identify five preliminary zones. Possible zones are:
 - areas capable of addressing the objectives related to the maintenance of the representative sample(s) of ecosystems, the ecotones and the key genetic materials;
 - areas capable of addressing the cultural heritage objectives;
 - areas capable of addressing the objectives related to recreation, tourism and the maintenance of the outstanding scenic resources;
 - areas capable of addressing the education, interpretative, research and monitoring objectives; and
 - areas capable of addressing objectives related to rural development, water production and erosion control.

Parts of these five preliminary zones will overlap; that is, some resources will be capable of addressing more than one objective.

- Check the preliminary zone which contains the representative sample(s), ecotones and key genetic resources in relation to the guidelines that have been prepared by Miller (1987). The zones should be large and able to sustain the survival of the ecosystem and its species.

- Check the preliminary zone which contains the cultural resources in relation to the zoning guidelines. Any cultural structures, objects or historic resources which exist outside the preliminary zones should be included in the nearest preliminary cultural site or area zone.
- Check the preliminary zone which contains the areas and points of interest for education, interpretation, research and monitoring. The challenge is to provide opportunities of interest such as plant, animal, geology and history.
- Check the preliminary zone which contains the outstanding scenery and the resources related to recreation and tourism. The preliminary zone for recreation and tourism should include site, features or areas which possess outstanding scenic qualities. If the scenic resources lie outside a scenic zone cluster, an attempt must be made to extend one or more of the scenic zones to engulf the scenic resources into the park and ensure their adequate protection.
- Examine the areas and points of the park which have direct relevance to rural development. Within the territory of the park study area, they are resources which are intimately related to the welfare of the rural people. Efforts should also be made to include natural and cultural environments required for the educational and interpretative needs of rural peoples to help them understand their environment and the role of the national park.
- Analyze the areas required for the administration of the park or which are to be used in ways inconsistent with park objectives. The preliminary zone map has located natural and cultural resources, and this should help to:
 - locate the park headquarters;
 - locate sub-headquarters (if necessary);
 - locate ranger stations;
 - locate non-conforming uses of the area;
 - establish special use zones for both the administrative and the inconsistent uses.

- Analyze the areas required for the reclamation of lands.
- Draft the zone specifications. This specification includes
 - name of zone;
 - definition;
 - general objective;
 - description;
 - specific objectives; and
 - norms for management.
- Identify the Development Areas and draft development area specifications. Some types of activities will be dispersed and require only minimal installation. Other types are concentrated and require facilities and infrastructure.
 - identify the areas where activities will be concentrated and installations required;
 - study the basic characteristics for each area;
 - prepare the specifications for each development area (should include the name of development area, theme of the area, services to be offered, facilities required and infrastructure required); and
 - locate development areas on the preliminary zone map as circles.
- Identify the sites where specific activities and developments are to take place. The planning team must examine each development area in greater detail.
 - analyze the specific locations and setting for the activities, facilities and infrastructure as outlined in the development area specification; and
 - prepare development area maps showing sites and general layout of developments.

- Cross-check the zoning proposal to insure consistency. At this stage, the planning team will examine the zoning proposal with five tools. These tools are: (1) Functional gradient- the change from one zone to the next should be hardly noticed except by the differences in land use; (2) buffering- special resources or habitats are to be surrounded by a strip of land which can acts as a barrier to external influences; (3) vertical integration- which considers the elaboration of primary wildland resources into more highly-valued benefits; (4) horizontal integration- which consideration and integration of the broad range of potential uses to which park resources can be devoted, and (5) regional integration- analysis and integration to ensure the internal harmony of the park, and the harmony of the park with its surrounding region and the nation.
- Correct all inconsistencies in the zoning proposal.

Step 6: Draft the Boundaries for the Park.

Generally, boundaries have been marked for most parks before the planning process begins. Nevertheless, the planning team should be free to reconsider the boundary and to propose modification as allowed by law. This work might include:

- Extending the line around the exterior of the cluster of zones.
- Checking to see that the boundary circumscribes a relatively self-contained unit.
- Checking the boundary for its shape.
- Checking the boundary for a buffer zone between the park and adjacent lands.
- Checking whether the boundary line is practical.
- Making the necessary changes in the boundary on the PRELIMINARY ZONES MAP.

Step 7: Design the Management Programs.

At this step, the planning team works on all the action elements. The action elements of the plan

are presented as Management Programs and Sub-programs. The Management Programs are designed to address the key action topics: Environmental Management (Protection, Resource Management, Recreation, and Tourism); Interpretation and Research (Interpretation, Education, Research and Cooperative Scientific and Monitoring Activities); and Administration and Maintenance (Administration, Maintenance, and Public Relations and Extension). The planning team is to work on all the programs and sub-programs simultaneously.

Step 8: Prepare the Integrated Development Program.

The management programs which are established in the previous steps provide for an analysis of various activities appropriate to the park objectives. The next process is to consider the physical development requirements for accomplishing the various management programs. The Integrated Development Program is a synthesis process to bring together the many factors analyzed in the previous steps and focus them upon issues and problems to guide subsequent planning decisions.

The preparation of an Integrated Program calls about the planning team

- to prepare the development concept for each zone which includes
 - physical structures
 - supplies and equipments
 - utilities
- to prepare a staff development concept which include
 - source of employees
 - training program
- to prepare a development concept for institutional factors which include

- examining the existing laws and policies
 - examining the existing regulations
 - examining the administrative procedures
 - evaluating the need to improve interdepartmental or international agreements
- to prepare the General Development Map.

This map is the first full draft plan of what the park will look like were it to be managed and developed according to the decisions made from steps 3 through 8.

Step 9: Analyze and Evaluate the Proposal.

The Management Programs and the Integrated Development Program give a clear statement of the alternatives to fulfill the objectives of the park. Likewise, the General Development Map represents the integrated statement of the entire proposal. But this statement remains only an alternative. The team now turns to the quantification of inputs to estimate a budget for the proposal. The purpose is to evaluate whether the proposal and the budget, were it to be actually implemented, would meet the objectives of the park.

The procedures for this step are simple and practical:

- List and present the inputs and outputs in terms relative to the national development plan, national development policies, and the programs of the national park department;
- Compare the outputs to the objectives of the park;
- Compare the required inputs to existing limitations and constraints. The information on budget, personnel needs, facts and assumptions will provide guidelines for judging the practicability of the inputs;
- Compare the outputs to the inputs;

- Accept or reject the alternative proposal. If the alternative proposal was rejected, the planning team must go back to step 5 and continue the process again.

Step 10: Design the Development Schedule.

At this step, the level and timing of development to achieve the park program is determined:

- Analyze the factors influencing the Development Schedule.
 - note the demand for each output,
 - consider ecological information and guidelines,
 - note the urgency of the need for various management and development activities,
 - analyze the constraints upon management and development,
 - note the budgetary requirements,
 - note the requirements for personnel,
 - consider institutional constraints upon the schedule.
- Prepare the Development Schedule Map by noting the roads, houses and other structures.
- Prepare the Management and Development Map by showing the phases of activities in detail.
- Prepare the Schedule Narrative by describing what should be done in each area.

When the elements of the Integrated Development Program are approved and scheduled, then the planning team can move to step 11.

Step 11: Publish and Distribute the Management Plan.

Once all the necessary elements of the Plan are integrated and the approval of the document by the Department Director and a Minister is obtained, the planning team should ensure that copies of the management plan are sent to the various appropriate parties. These include:

- park managers

- park rangers, researchers, administrative staff and laborers
- government officers of national planning, legislature and finance
- general citizenry
- international institutions

The planning team helps to put the plan in the hands of those who should read and act upon it; helps them to understand it; shows them slides and maps, and gives special slide-talks to key officers and the public.

Step 12: Implement the plan.

This is the actual action plan after the planning document of the park has been approved. The implementation task will be the responsibility of park manager. Among the factors that he should accomplish before starting the program in his park are to:

- gain plan approval by the appropriate Minister and Director of the Parks Department
- obtain the delegation of authorities
- obtain a letter of instruction and clear terms of reference
- receive necessary support from central and regional offices
- use the management plan as a reference document

Step 13: Analyze and Evaluate the Plan.

Careful methods must be established to monitor the implementation of the plan. As the implementation proceeds, the park manager must realize that the problems can easily develop. Every plan should also be evaluated. The park manager should carry out three tasks during plan evaluation. First, he should review the plan implementation progress and problems systematically. Second, he should be aware of the implications of progress and problems upon overall park plan-

ning. Lastly, he should prepare specific guidelines for corrective measures, amendments and principles.

Step 14: Feedback and Revise the Plan.

When problems are identified, all the corrective measures should be done without delay. If major discrepancies are found at step 13, it may be necessary to revise the the plan. If so, the decision for revising the PLAN should be obtained from the department's directors (Miller, 1987).

4.5 The National Park Planning Process in ASEAN (Association of Southeast Asia Nations) countries

The ASEAN Expert Group on the Environment, the United Nation Environmental Program (UNEP) and the U.S. National Park Service recently studied the national park planning needs of ASEAN countries (ASEAN Expert Group on the Environment, 1986). ASEAN includes Thailand, Malaysia, Indonesia, Philippines, Singapore and Brunei. The recommended process is essentially that recommended by Miller (1987) for the Latin American countries which was described above. Recall that the Latin American park planning proposal had 14 steps:

1. Gather basic information and background;
2. Inventory the area in the field;
3. Analyze the limitations and constraints;
4. State the objectives of the park;
5. Divide the area into management zones;
6. Draft the boundaries for the area;

7. Design the management programs;
8. Prepare the integrated development program;
9. Analyze and evaluate the plan;
10. Design the development schedule;
11. Publish and distribute the management plan;
12. Implement the plan;
13. Analyze and evaluate the results;
14. Gather feedback and revise the plan (replan).

The process recommended for ASEAN countries is as follows:

1. Prefield activities;
2. Gather basic information and background material;
3. Inventory and site-check the field area;
4. Analyze the limitations and constraints;
5. Refine and state the objectives of the park;
6. Divide the area into management zones;
7. Draft or revise the park boundaries;
8. Design the management programs;
9. Prepare the integrated development program;
10. Analyze and evaluate the proposal;
11. Design the development schedule;
12. Publication and distribution;
13. Implementing the plan;
14. Periodically analyze and evaluate the plan;
15. Feedback and revise the plan.

Differences between the two processes are the total number of steps, the addition of step 1, and modifications of steps 2, 5, 8 and 13.

1. Step 1 - Prefield activities

A work plan is prepared at this step. In a work plan, the planning team prepares an outline of the planning steps to be accomplished, timing, person-in-charge, and target dates for completion. A number of local communities are also identified in order to determine their issues, concerns, negotiate strategies, and refine actions for alternative plans.

2. Step 2 - Gather basic information and background material

In this step, a recommendation to gather information on existing park conditions relating to visitor use and management is added. Most park areas will have some form of pre-existing recreation, tourism, and management. Therefore, information on visitation (domestic, foreign, and international), facilities, roads, structures, utilities, transportation, equipment, and personnel and administrative infra-structure should be collected. In addition, visitor use data may be collected on leisure and recreation patterns both inside and outside the park to determine user preference trends. This information will be used later to determine what types and locations of visitor activities and services to provide. Second, this step helps the planning team to identify constituencies. In this way issues and concerns can be identified. Possible constituencies include, but are not be limited to, all concerned government agencies, development agencies, conservation groups, international groups, other park managers, local residents, park users, mayors, governors, and planning boards (ASEAN Expert Group on the Environment, 1986).

3. Step 5 - Redefine and state the objectives of the park

The objectives of the park should harmonize with the national development plan, national conservation policies and the existing and potential land uses. The objective should be related to the value of the areas, but not stated nebulously such as "preserve for future generations". Goals must be related to the particular area, not parks in general.

4. Step 8 - Design the management program

Management programs for the park are prepared with an addition of a rural economic development program. The management program thus takes into account the economic needs of the people living in or adjacent to the park. Second, the management programs are designed to include both law enforcement and protection elements. These elements have many linkages with other programs, particularly with visitor use and resources management.

5. Step 13 - Implementing the plan

In this step, a new factor was recommended for the ASEAN countries. This factor is an Annual Operating Plan, and it complements the management plan. It is based on the priorities in the management plan and includes all the scheduled activities in all the programs for a given year. This may also be used as an aid in elaboration and justification for the next year's programs and budget.

5.0 CHAPTER 5: EVALUATION OF STRENGTHS AND WEAKNESSES OF VARIOUS PLANNING PROCESSES FOR MALAYSIA'S NATIONAL PARKS

This chapter consists of an evaluation of the applicability and usefulness of resource planning processes from the United States Forest Service and National Park Service, Canada and Latin America for Malaysia's national parks. The evaluation process does not include the planning process recommended for ASEAN countries (ASEAN Expert Group on the Environment, 1986), because this planning process is very similar to the Latin America planning process.

5.1 Evaluation Criteria

In order to guide the evaluation process, it is useful to provide readers with a restatement of the evaluation criteria which were described in detail in chapter 3. The evaluation criteria are:

1. The planning process should be simple and inexpensive to implement;
2. The planning process should be adaptable and appropriate to existing planning, management and decision-making processes of the Malaysian government;
3. The planning process should require and facilitate consideration of regional resource inter-relationships;
4. The planning process should avoid value judgment;
5. The planning process should be a rational comprehensive approach. It should require scientific analysis and utilize technical knowledge in the evaluation of alternatives and choices;
6. The planning process should provide consistent results when replicated in the same area by different people;
7. The planning process should have to capacity to consider a broad range of objectives;
8. The planning process should facilitate an evaluation of impacts of alternative park management proposals on economic, social and environmental outputs;
9. The planning process should facilitate public participation.

5.2 ROS-LAC Planning Process

The ROS-LAC planning process involves nine interrelated steps. The steps are:

1. Identify area issues and concerns.

2. Define and describe recreation opportunity classes.
3. Select indicators of resource and social conditions.
4. Inventory existing resource and social conditions.
5. Specify standards for resource and social indicators for each recreation opportunity class.
6. Identify alternative recreation opportunity class allocations.
7. Identify management actions for each alternative.
8. Evaluate and select a preferred alternative.
9. Implement actions and monitor conditions.

Overall, the ROS-LAC planning process seems relatively simple except when defining the ROS land classes in step 2 and specifying indicators and standards for resource and social conditions for each recreation opportunity class as required in steps 3 and 5. These steps make the ROS-LAC process seem too complex for Malaysian national parks. Relating experiences to settings and knowing what setting variables to consider as indicators are both difficult. Measuring appropriate setting variables is also difficult. The ROS zones as typically defined in the USA are too specific and refined for Malaysia, and emphasize recreation too much. They neglect other most important objectives for managing national parks such as tourism, ecological diversity, and endangered species management. Although the ROS-LAC process is quite simple to carry out, its process is very expensive because there is so much public involvement. Considerable time will be spent outside the planning office to conduct the public participation programs. In addition, much time will be spent on training personnel to carry out the planning process. Specifying appropriate standards for resource and social indicators also seems very difficult for unskilled park personnel.

Evaluation criterion # 2 calls for a process that is adaptable and appropriate to the existing planning, management, and decision-making processes of Malaysian government. The ROS-LAC planning process meets this planning criterion because it resembles the current planning structure of a centralized, top-down decision making process of Malaysia. However, the ROS process demands far more public involvement throughout the process than is customary in Malaysia. Lastly, the ROS-LAC planning steps are quite similar to the current planning process of the Wildlife and

National Parks Department of Malaysia, except for the steps 2, 3, and 5. Defining and describing recreation opportunity classes is difficult for park staff to do, but selection of indicators and specifying standards of the ROS-LAC process might be workable for Malaysia if a practical means for gaining public involvement could be developed.

The ROS-LAC planning process successfully meets evaluation criterion # 3. It considers both regional and local influences on the planning process. This is one of its greatest strength. The ROS-LAC planning process also incorporates issues and opportunities regarding recreational demand from a broad regional perspectives. Another factor that comes under this evaluation criterion is the need to facilitate consideration of buffers to protect the parks. The ROS-LAC planning process responds to this requirement because its land allocation scheme helps to assure necessary buffers for visitors to get satisfaction on their selected settings. For example, in step 6, the process emphasizes such buffers by allocating a Semi-Primitive Non-Motorized ROS class next to a Primitive ROS class.

The ROS-LAC planning process uses value judgment, especially for the land classification scheme called for in step 2, the process of selecting of indicators in step 3, and the process of specifying of standards for resource and social conditions in step 5. The value judgments used in other steps of the planning process are greatly reduced by the public comments in steps 1, 6, 7, and 8.

The ROS-LAC planning process is sufficiently rational for Malaysia. It contains the relevant steps, that are inter-related and very clear. Also, the planning process successfully follows a sequential and iterative path; thus, it is easy to incorporate new information on issues, objectives, alternatives, and impacts throughout the process.

The ROS-LAC process does not seem to meet evaluation criterion # 6; it does not necessarily provide consistent results. These inconsistencies result from too many subjective judgments. Since the planner has a wide latitude for subjective judgments, recommendations of indicators such as

remoteness, size of area, evidence of humans, user density and managerial aspect in the ROS-LAC planning process might be different from other planners.

The ROS-LAC planning process does not facilitate consideration of a broad range of objectives. It considers well a range of recreation opportunities; it does this better than other processes considered. However, other objectives of national parks such as maintaining genetic resources (flora and fauna), facilitating education and research, and supporting rural and regional development are not taken into considerations. Since the ROS-LAC emphasizes only recreation, its usefulness for planning national parks in Malaysia is reduced significantly.

It seems that the ROS-LAC planning process fails to meet evaluation criterion # 8, because it does not simultaneously consider the economic, social and environmental outputs. The ROS-LAC planning process stresses heavily the evaluation of impact of the various alternatives on social elements. At the same time the ROS-LAC planning process facilitates the evaluation of impacts on the natural environment. The evaluation of impacts on economic outcomes is totally absent; this reduces this planning processes usefulness and effectiveness for planning for Malaysian national parks.

The ROS-LAC planning process adequately facilitates public participation. Public participation is a major thrust of the ROS-LAC process. It ensures that important issues in the area and various kinds of recreation opportunity classes could be identified and dealt with through public participation. Because the ROS- LAC planning process focuses on conditions, and because the costs associated with achieving the different alternatives have been identified in step 6, public groups are given the opportunity to focus their comments on specific actions or alternatives. It also enables different groups to better understand how different alternatives impact on their own use and enjoyment of the park.

5.3 The General Management Plan (GMP) of the U.S. National Park Service

The National Park Service's general management planning process has six phases:

1. Statement For Management
2. Issues analysis,
3. Development of alternatives,
4. Alternatives document for public involvement,
5. Preparation of draft GMP/Environmental document,
6. Preparation and approval of the plan.

The planning process for a general management plan is not easy to implement. But, the preparation of a "Statement For Management" to be used for phase 1 is more simple and less detailed than the GMP. Therefore, the Statement for Management would less likely need outside help. The GMP often needs outside help from the Denver Service Center to provide the field staff with necessary information and guidance on ecological field studies, such as flora and fauna investigations, and park visitor estimations. Also, this planning process likely requires outside experts to gather scientific data for interpretation of the alternatives in phases 4 and 5 of the planning process. Also, since there is considerable public involvement, the GMP planning process is likely expensive.

The General Management Plan process would be adaptable and appropriate to the current planning and decision-making processes of the Malaysian government. Policies of the U.S. National Park Service regarding the development of national park lands tend to originate at central headquarters, are channelled down to the regional offices, and finally to a specific national park. Another requirement of this criterion is an environmental consideration during the process. The planning team in the NPS process submits not only the proposed management plan but it also submits an

environmental document in phase 5 prior to plan approval. The preparation of environmental document is appropriate for Malaysia, because now the Malaysian policy calls for the natural resources agencies to submit an environmental document to the Ministry of Science, Technology and the Environment before any management plan is submitted to the EPU, the Treasury Department and the Public Service Department.

In the development of NPS general management plan (GMP), the planning team uses a public participation program. Through this program, local and regional issues are identified. Such issues as the existing land use policies, economic and social growth, recreational preferences, and transportation patterns surrounding the park's boundary have been major concerns in phase 2. Responding to these issues, the planning process calls for coordination among other agencies and publics, and addresses a variety of land use issues during the development of alternatives. This leads to creation of buffer zones to protect the park's lands.

The U.S. Park Service planning process provides a framework to keep personal judgment to a minimum. As such, it meets evaluation criterion # 4, which calls for avoiding value judgment. The value judgments that are used are done very carefully and are noted clearly. One of the "rules of game" of the GMP planning process is to make use of models. A number of scientific models are used in determining the floodplain boundaries, visitor use, and threatened or endangered plant and animal species that are present in the park. In addition to scientific models, the planning process states that a full understanding of the requirements, guidelines and steps will assist the planning team in making a GMP. This might help do reduces value judgments in the process.

The planning process of a GMP is a rational comprehensive approach. The planning process follows a sequential procedure, and permits the planner to accept new information on issues and alternatives as the process proceeds. The GMP process does not formulate broad objectives during process, but the objectives are emphasized in the SFM. The SFM specifies the objectives and provides an initial assessment of opportunities for achieving them; these are to be used in the preparation of the GMP. One weakness of the GMP process is that implementation and moni-

toring of the results of the proposed programs are not a specific planning step. Implementation and monitoring are only addressed as part of step 6.

There is no doubt that value judgments might produce differing results from the NPS's GMP process. But during the development of alternatives, specific models are used by the planning team to calculate benefit and cost analysis. Therefore, the results of this phase of the GMP planning process might be the same when replicated by different people in the same area. The strength of this planning process is that it uses a specific model for a specific analysis with the aim of producing consistent outputs, thus it is useful for current planning problems of Malaysian national parks.

Although the General Management Plan process does not address objectives as a separate step, the objectives are developed in a SFM. Identification of objectives is done by park superintendent and the regional director and other staff members at regional offices. Likely objectives of the SFM that must be considered during the GMP preparation are to promote recreation opportunities, the conservation of natural and genetic resources, preservation and protection of cultural resources and their settings, and development in order to serve the needs of rural and regional development. In order to achieve these objectives, the planning team has been equipped with all the necessary requirements and procedures in its Interim Management Guidelines (IMG). Although, the IMG is not clearly mentioned in phase 2, its guideline actually have been established before the actual planning process begins. These guidelines and procedures greatly enhance the ease of formulating a broad range of objectives for the national park. The consideration of a broad range of objectives in plan preparation not only provides Malaysia with diverse recreational opportunities but it also takes into account other park resources that must be protected for future generations.

This planning process meets criterion # 8; the analysis and evaluation of impacts on economic, social and natural resource settings have been carried out very carefully and simultaneously. This is one of the strength of this planning process. The evaluation and analysis of impacts of alternatives of this planning process is carried out in phase 4. Both qualitative and quantitative measures of impacts are addressed according to NEPA requirements. The result of this evaluation is used for

the preparation of an environmental document. This in turn is subject to public review. This characteristic of planning process increases its usefulness to Malaysia for planning a national park, because the evaluation of impacts on economic, social, and natural environment are major concerns of every management action.

The GMP planning process meets evaluation criterion # 9. This planning process provides opportunity for the public to voice their concerns about the development and management of the parks. Public participation is facilitated early in the planning process in phase 3 and followed up by steps 4 and 5. Those whose opinions are sought include federal agencies, state historic preservation officers, advisory organizations, concessioners, park users and their associations, owners and users of adjacent lands, and other interested parties. Opportunities for public participation in the GMP planning process include public workshops and meetings, informal work sessions, and public review and comment on draft documents.

5.4 The Canadian National Park Planning Process

The Canadian national park planning process has the following steps:

1. Park purpose and objectives statement,
2. Interim management guidelines,
3. Terms of reference,
4. Data base analysis,
5. Alternative plan concepts,
6. Park management plan and plan summary.

Since the Canadian national park planning process includes Corporate Planning, Systems Planning and Regional Planning, it is difficult to apply to Malaysian national parks because it is far too complex. This process is quite expensive to implement, because it requires skilled personnel to carry out preparation of Interim Management Guidelines for step 2 and data base analysis in step 4. During step 3, expert advice on economic conditions is required to conduct the analysis of benefits and costs from the broader context of the region and nation. Expert advice on visitor activities, recreational patterns, interpretation opportunities and park operations are also required. The use of many skilled personnel and outside experts during this planning process reduces its applicability for planning national parks in Malaysia.

The Canadian national park planning process does call for decision-making in a manner similar to the Malaysian government. The decision-making process for the national parks in Canada involves personnel from top government level, that is the Minister, down to technical staffs. Although the Corporate Program Planning function has no power to approve the final plan, its tasks seem similar to the Malaysian Economic Planning Unit at the federal level. (The EPU sets short and long-term economic development policies.) The Canadian park planning process also emphasizes environmental quality by facilitating preparation of environmental documents before final decisions are made in step 5. Such environmental documents must be presented to the public for review.

The consideration of regional resource interrelationship is a real strength of the Canadian system. Therefore, the Canadian National Park planning process meets the criterion of incorporating both local and regional interests and outputs of a park on surrounding lands and communities. These considerations are stressed very heavily in steps 2, 3 and 4 of the process. In fact, the planning team is called upon to extend the planning process boundary to permit review of the potential effects of the national park on the region. The planning process also facilitates the integration of natural resources, and identifies conservation and development plans of other agencies that might be affected by the management of the park.

The Canadian national park planning process attempts to minimize value judgments. It does this by first assigning duties to the planning team, and giving necessary authority and instructions to members of the planning team to carry out its responsibilities. Such duties, authorities and instructions are mentioned in the step 3. Some value judgments seem to be required in step 5, but negative impacts of such judgments are reduced as the alternative plan concepts are subjected to public review.

The Canadian national park planning process is quite rational in nature. This increases its usefulness for planning national parks in Malaysia. This planning process includes Corporate Program Planning, Systems Planning and Regional Planning. Each planning level has its own functions and they are closely related to one another during the process of making a general management plan. In addition, the planning steps follow a sequential procedure and the process considers new information on issues, alternatives, and impacts as it progresses.

This planning process makes its recommendations by closely following the Terms of Reference. These help it to avoid inconsistency in recommended alternatives and outcomes when the process is replicated by another person. The Terms of Reference (TOR) are one of the most important guidelines that determines and produces the consistent results concerning the management recommendations for the park. In addition, the Interim Management Guideline (IMG) requires analysis to be carried out in a scientific way, i.e., by means of models in step 2. This facilitates consistency in process output by specifying resources conservation program designs, visitor facilities, standard and research results in relation to recreation and wildlife. The use of various models, standards, and specific designs to get consistent results make the Canadian national park planning process useful for Malaysia.

The planning process of the Canadian national park planning process considers a broad range of objectives. The statement of these objectives are determined by Systems Planning. Such purpose or objectives are to enhance resource preservation and public use, provide recreation, carry out development, and integrate regional land-use issues in the context of park developments. Further-

more, objective criteria are provided in step 3 for identifying critical areas or habitats of unique, rare, and endangered species, representative features, and significant cultural resources. Such criteria are essential for Malaysia to facilitate its selection, development, and management of national park lands.

The Canadian national park planning process meets criterion # 8; its evaluation of impacts is conducted in a comprehensive and systematic manner. The Canadian national park planning process does the evaluation of impacts in part to reflect who benefits and who bears the costs within a regional context. Expected levels of visitations permits an evaluation of impacts of visitor activities as needed for the preparation of the management plan. Socio-economic evaluation during the planning process assists in establishing the expected economic contribution of the park to the economy of the local region. Such evaluation of the expected impacts or effects of park proposals should help the management of parks in Malaysia.

The Canadian park planning process uses public participation programs during the preparation of the management plan. Public participation is conducted at steps 2, 5 and 6, but most public input is gained in step 5. Such public input especially early in the planning process, for identifying issues, setting criteria and guidelines, and reviewing of alternative plan concepts is good for Malaysia.

5.5 A National Park Planning Process for Latin America

There are fourteen steps involved in the proposed Latin American planning process:

1. Gather basic information and background,
2. Inventory the area in the field,
3. Analyze the limitations and constraints,

4. State the objectives of the park,
5. Divide the area into management zones,
6. Draft the boundaries for the area,
7. Design the management programs,
8. Prepare the integrated development program,
9. Analyze and evaluate the plan,
10. Design the development schedule,
11. Publish and distribute the management plan,
12. Implement the plan,
13. Analyze and evaluate the results,
14. Gather feedback and revise the plan.

The national park planning process recommended for Latin America is not very complex. Although there are many steps and these steps are defined in much detail, they are not as complex as the ROS. The task of the planning process is made easier because careful guidelines are given to the planner at each step. But considerable data is required. Some of this data will require expert assistance to gain it, and the requirement for lots of data will be expensive.

The planning process from Latin America can be easily adopted as a standard planning process for Malaysia. The planning strategy emanates from the central headquarters, and it uses a systematic and consistent format on a country-wide basis. In order for the process to be used in Malaysia, the National Parks Advisory Council at the federal level in Malaysia should first formulate policies and planning guidelines. These policies and guidelines should then be standardized. One problem of the Latin American planning process for Malaysia is that it does not contain an environmental impact assessment. In this context, it is less appropriate for Malaysia, because at present the Malaysian government emphasizes the importance of environmental qualities for the nation.

The planning process from Latin America does facilitate comprehensive regional resource planning. Regional resource interrelationships are one of its major characteristics. Therefore, the planning

process meets criterion # 3. The process begins with an overview of the land-use pattern of the region, and proceeds to a detailed analysis of potential national parks and protected areas in step 2. In the review and evaluation of potential effects, the planning team gathers information and data about the region, and includes an evaluation of natural resources and socio-economic conditions, delineation and analysis of sub-regions, and identification of critical institutions and geographic areas. Another strength is that this planning process seems quite efficient in setting its priority developments within the park in step 10, by addressing pressing natural, economic and social resource issues and opportunities outside the park. Thus, this strategy may help to anticipate or even reduce sudden changes in economic and social trends within the region. In general, the planning process from Latin America is appropriate for Malaysia because the process considers regional interrelationships into more broader context. It not only focuses on the park, but it is also concerned about the local people in terms of their economic and social well being.

The Latin American planning process does have some subjective or value judgments, but these judgments are kept to a minimum. The procedures and methods to reduce subjective judgments are provided for the planning team. Among these methods are procedures for describing the inputs and outputs in terms relative to the national development plan, national development policies, and the program of national park development in both qualitative and quantitative terms. In step 11, the public participation program helps the planning team to identify and select which programs will be selected, and this greatly reduces value judgment by the planner.

The planning process for Latin America seems quite rational. The steps of the planning process are generally carried out in an appropriate sequence manner. Although the statement of objectives comes late in the planning process in step 4, the formulation of objectives does takes into consideration the basic information of the park and evaluates its limitations and constraints. Evaluating limitations and constraints early in the planning process makes the Latin American process useful for planning national parks in Malaysia.

The Latin American planning process tries to facilitate consistent output by providing checklists for the planning team during the planning effort. But guidelines for determining draft boundaries in step 6, designing the management programs in step 7, and evaluating of the plan in step 9 are too general to facilitate the achievement of consistent results. No model has been used in the evaluation process; consequently it leads the planning team to give inconsistent results.

This planning process is capable of meeting evaluation criterion # 7; it addresses a broad range of objectives. These objectives are mentioned in step 4 of the process. Such objectives are to consider the maintenance of representative examples of ecosystems and the key genetic materials of the environment, protect cultural heritage values, provide for education, interpretation, research and monitoring, and enhance rural development in terms of water production and erosion control. Consideration of a number of objectives during the planning process reflects the requirements of the Malaysia's situation that every plan should consider national initiatives, policies, recreational preferences and conservation aspects. Thus, this planning process can be useful for Malaysia.

The basic reason for this planning process is to enhance environmental protection and economic development in the planning of national parks. Thus, environmental and economic impacts are heavily emphasized. The weakness of this planning process on this criterion is that social impacts do not seem to be very well covered. For example, the impact of a proposed park on the life style of local community residents receives little attention.

One of the most important considerations in any evaluation of the planning process is the extent to which it facilitates public participation. The major weakness of this planning process is that the public is only involved in step 11. There is no call or collective agreement on how to initiate public participation early in the planning process. The planning process does require the planning team to consider regional resources in preparing its management and development plan. Regional resource development will affect the public, but the public is not given opportunities to express its views on proposed management actions early in the process. When suggesting a new planning process for Malaysia national parks, there is a need to make the Wildlife and National Parks Department re-

sponsive to the dynamic nature of the public, rather than relying upon plans which pretend to give the “final word” on how the park is to be managed and developed.

5.6 *Summary*

The result of this evaluation of each of the four processes is summarized in figure 7.

It seems that no process is perfect, but each of them has strengths. Therefore, any ideal planning process for Malaysian national parks will benefit most from selecting the best components, not all the steps, of each of the processes.

CRITERIA	ROS-LAC	NPS	CA	LA
1. Easy and inexpensive	-	-	-	0
2. Adaptable	-	+	0	++
3. Regional resource	+	+	++	++
4. Value judgment	-	0	0	0
5. Rational approach	++	+	+	0
6. Consistent results	--	-	0	-
7. Broad objectives	--	++	++	++
8. Evaluation of impacts	0	+	+	0
9. Public participation	++	++	+	-

++ VERY GOOD

+ GOOD

0 OK

- POOR

-- VERY POOR

CA = CANADA

LA = LATIN AMERICA

NPS = NATIONAL PARK SERVICE

Figure 7. Evaluation Summary of Park Planning processes.

6.0 CHAPTER 6: RECOMMENDATION OF A NEW PARK PLANNING PROCESS FOR MALAYSIA

This chapter provides a step-by-step illustration of a recommended planning process for Malaysian national parks. The recommended process incorporate the best components of the four existing planning processes reviewed in chapter 5, and reflects resource planning and decision making conditions in Malaysia.

6.1 The Planning Problem

The Wildlife and National Parks Department is responsible for making a general management plan for new and existing parks and determining how to best manage national park lands, based on consideration of both public desires and land capabilities. Arriving at this determination is an extremely complex process. A wide range of public desires and concerns must be interfaced with

limited resources capabilities in order to develop the best possible answers to park management questions. At present, the Wildlife and National Parks Department manages national park lands to protect and preserve flora and fauna to meet public desires. But these public desires are widely varied and often compete with each other. For example, one segment of the public may wish to have maximum privacy for camping, while another may enjoy companionship and neighbors while camping. Capabilities of park lands are also complicated, and some are suitable recreational development and some not. Some are suitable for both recreation and endangered species protection, but these two land uses are often mutually incompatible. Because of the complexity of public desires and preservation mandates and production possibilities, the number of potential solutions to land management problems is generally large.

The principal public desires relating to management of national parks should be considered when developing management plans. Development of recreation opportunity for tourism, management of wildlife habitat, protection and preservation of flora and fauna are issues of park lands about which the public has preferences. Concerns regarding transportation systems, lodging management, water quality, location of recreational development, and the social and economic effects of management are also key considerations in assessing management options.

The national park lands in Malaysia have the physical capacity to respond to each of the above issues and concerns in a variety of ways. One park typically cannot, however, provide a mix of opportunities and management strategies which resolves all of them at once. The mutual exclusivity for some of the opportunities that parks can provide precludes such an ideal solution. The need to examine a wide range of alternatives and management regimes is important with the goal of finding an operating strategy which comes as close as possible to simultaneously resolving all the issues and concerns.

In summary, the variety of public desires and the primary goals of the Wildlife and National Parks Department combine to make the problem of developing a comprehensive management strategy

exceedingly complicated. Fortunately, extremely complex problems can be made more understandable and more likely resolved by rational, sequential, and iterative planning.

6.2 A Park Planning Process for Malaysia

6.2.1 Introduction

The recommended new national park planning process uses the best features of all the planning processes described in earlier chapters. The planning process represents a logical, rational and trackable approach to natural resource and national park decision-making.

The recommended process has a goal of providing the information needed by decision makers to select the combination of outputs (opportunities), services, and land uses which most closely approaches maximum net public benefits. The National Park Act 1980 (section 8.1 to 8.3) and Wildlife Protection Act 1976 (section 4.1) provide the responsibilities to the Wildlife and National Parks Department for addressing these objectives. Having evaluated and assessed various planning processes in the U.S.A, Canada, Latin America and other Malaysian natural resource agencies, this new planning process represents a comprehensive approach which appears suitable for management of the Malaysian national parks.

The recommended planning process follows a logical set of sequential steps, with each step inter-related. Different steps of the planning process may occur simultaneously. At any point during planning process, the planning team may need to back-track, re-trace, and rework decisions.

6.2.2 The Planning Steps

The proposed planning procedure is an eleven-step process for development and implementation of general management plans. These steps cover the entire flow of plan-related activities, from the initial definition of the planning problem through the evaluation of the results of plan implementation. The individual planning steps are described in the following paragraphs.

1. Identification of opportunities/problems

The recommended planning process will use the USA's NPS general management phase 1 (issue analysis strategies) to produce a planning output, i.e, the "Statement for Management". The scope of this step is broad and purposely includes public involvement early in the planning process. The best method to define public perceptions of opportunities or problems might be during political party meetings at the local level.

This initial step involves the determination of the factors that will form the focus of the general management plan. A National Park interdisciplinary team (see Appendix E) is responsible to identify the relevant public issues, management concerns, and resource use opportunities on the basis of public involvement and coordination with other federal agencies, state and local governments. Those which lend themselves to resolution through the planning process are then identified by the Park Superintendent. Then, a list of opportunities or problems are prepared. The planning should at this stage begin to formulate a broad range of objectives for the parks.

2. Formulation of objectives

During the formulation of objectives, the planning team must review the national development plan, the existing and potential land use policies, the general conservation objectives, and people preferences. Objectives must be stated so as to provide management with a series of specific mandates which are clearly related to the park, its resources and its purposes. Possible objectives are

to facilitate outdoor recreation opportunities for the public and tourism, protect the ecological diversity, save and conserve wildlife species - especially endangered species in the park, facilitate education and research, and support rural and regional development in terms of income and employment. This set of desired opportunities then becomes the foundation upon which the remainder of the planning process is constructed.

3. Selecting planning criteria

Next, the National Parks Advisory Council should develop planning criteria. Such planning criteria include delegation of responsibilities, timing of planning, land classification scheme (zoning), how to do public participation, and selection of a formal review process. These criteria guide the planning team on what data to measure and collect, and in the design, formulation, and evaluation of alternatives. The purpose of these "rules of the game" is to develop beforehand the framework within which analysis is to be carried out in order to assure that the analysis is both sufficiently comprehensive in addressing the planning problem and as objective as possible. These criteria are designed to assure that the effect of each alternative on outdoor recreation opportunities, ecological diversity, management of endangered species, and land allocation for recreational activities and tourism is adequately assessed.

4. Collecting data and information

This step involves the development of the data base to be used in analyzing the management situation, developing and assessing alternatives, and monitoring the implementation of the selected alternative. Much of the data is obtained from a SFM. Other data needs are determined by the interdisciplinary team, based on its assessment of the information needs associated with addressing current problems and providing opportunities.

Kinds of data needed are as follows:

a. Physical and Biological Data Base

May include information on vegetation and its composition, type of wildlife habitat, wildlife, soil types, rivers, caves, and topography.

b. Economic Data Base

May include cost for construction of trails, roads, lodging facilities, interpretation signs, maintenance and repair, and salaries.

c. Social Data Base

May include the number of local and foreign visitors, future demand for park lands, attitude of the local population, preference and attitude of park visitors, and effect of park on social structure of local communities.

d. Institutional Data Base

May include data on the legal requirements for the park, policies and tradition of the park agency, and guidelines for decision making.

e. Regional Data Base

May include the consideration of the region surrounding the park and its interrelationship with the park in a present and future sense. Such data include regional development plans, existing economic uses surrounding the national park lands, attitudes of local people, local and regional economy, social structure, and transportation and communication systems.

Existing data are to be used to the fullest extent possible, but expansion or supplementation of this is often necessary to fully address the problems or opportunities.

5. Identify and Describe Possible Management Zones

This is a new planning step for Malaysia, but one that seems appropriate. Public participation should always be used in this step so as to reduce the subjective judgment of the planning team. This step should contain summarized information of resources inside the park, highlighting significant features. The planning team must concentrate its efforts to examine what kinds of land use categories are possible and needed for the park.

To ensure the internal harmony of the park and the harmony of the park with its surrounding region and the nation, the planning team must carefully separate conflicting and competing uses of the park. This is done through zoning. The zones recommended by Miller (1987) are modified to reflect the needs for Malaysia's national parks.

a. Natural Zone

This zone consists of natural area which has little human-caused alteration. The area can contain unique portions or elements of ecosystems, an entire ecosystem, and species of flora and fauna as well as natural phenomena of scientific interest.

The general management objective is to preserve the natural environment and at the same time to facilitate scientific research, environmental education and primitive forms of recreation.

b. Extensive Use Zone

This zone consists principally of natural areas but also may contain area with human alteration. The zone contains examples of the general scenery and the significant features of the park and possesses kinds of topography and land-use capacity which can be developed for recreational activities. Such activities are always developed within an environment dominated by the natural features of the area.

The general management objective is to maintain the natural environment with minimum human impact while providing access and public facilities for recreational purposes.

c. Scientific Zone

This zone consists of natural area which has received very little human-caused alteration, contains unique or fragile portions or elements of ecosystems, or species of wildlife which require relatively complete protection from other than natural influences. The purpose of the zone is scientific research, ecosystem protection, and genetic resource protection. Specifically excluded from the zone are roads and trails.

The general management objective is to preserve the natural environment providing only scientific uses and non-destructive administrative and protective functions.

d. Intensive Use Zone

This zone consists of natural or man-made altered areas. The area contains individual sites of outstanding scenery, resources which lend themselves for relatively dense recreational activities, and topography that can be developed for the necessary support facilities.

The general management objectives are to facilitate environmental education and intensive recreation in such a manner as to harmonize with the natural environment.

e. Development Zone

This zone consists of areas for administration, maintenance, development and other activities which are basically inconsistent with the management objectives of the national parks.

The general management objective is to minimize the negative impact of these facilities on the natural or cultural environment. These developments and activities are communication, water works, cables, buildings, and fences.

f. Special Use Zone

This special use zone consists of areas for other government agencies or private interests on land within exterior park boundaries. This land use provides support for local communities and the need to facilitate the New Economic Policy (NEP) of the Malaysian government. The negative impacts of special use zone can be reduced by cooperating with surrounding agencies to create buffers.

6. Formulation of alternatives;

In order to be rational in nature, a broad range of alternatives should be prepared in conjunction with the public involvement initiatives to meet a park's problems, issues, and objectives. Thus, the current planning process of Malaysian national parks will be changed to require consideration of more than one alternative. The guidelines regarding alternatives formulation of the GMP (phase II) of the U.S. National Park Service and the ROS concepts of the U.S Forest Service will be adapted to the Malaysian situation.

Each of the alternative land and resource management strategies is designed to address the park's purpose, problems and issues in a different way. The information gathered and insights gained as a result of the first three planning steps serve as the basis for alternatives development. The principal goal of alternatives formulation is to develop a wide range of feasible, issue-oriented options for meeting park objectives. Each alternative is described and designed so that the management prescriptions and practices associated with it represent one cost-efficient way of meeting park objectives. The range of alternatives plans considered should reflect the broad range of publicly held concerns and proposed solutions.

For each alternative, the planning team should:

- identify the specific management zones and their boundaries.
- identify the sites within management zones where specific developments will take place.

- examine the movement of visitors.
- examine the home range of wildlife species and how the proposed zoning protects unique, threatened, or endangered species.
- check transition areas between zones so that conflicts among uses do not occur.
- identify the management actions required within each zone.
- identify the costs of management to meet park objectives.

In addition, the planning team should consider plans of others. Federal, state and local governmental agencies may have plans that address one or more of the planning objectives for the national park. Public and private organizations may also have proposals that should be considered. Judgment must be exercised to determine which proposals of others are viable and whether or not they should be studied further in the planning process.

7. Evaluation of alternatives

The current planning step of Malaysian national parks regarding evaluation of alternatives is retained. However, the GMP process of the U.S National Park Service and Canadian Parks planning process provide guidelines for improving Malaysia's process. Both the GMP and Canadian Parks planning processes focus heavily on the evaluation of impacts of alternatives. These include the economic, social and environmental impacts.

The recommended step compares the output of park opportunities and services associated with each alternative, with the intent of identifying the alternative which entails the most desirable pattern of responses to purpose and need. The planning team will analyze the cumulative effects of each alternative. These effects might be written in the form of table that specifies outputs on a year

to year basis. The evaluation of the impact of alternatives should be carried out in a systematic way. More specifically, the planning team should:

- a. evaluate the impact of the different alternatives on varying projected amounts and types of visitors.
- b. critically examine and evaluate each alternative's effect on the wildlife habitat of threatened and endangered species. Another critical variable is to assess each alternative's effect on future scientific and education programs. It is important that the buffer zones be checked to evaluate their positive effects on park wildlife and park visitors, while at the time noting any negative effect of buffer zones on adjacent rural populations.
- c. evaluate each alternative's effect on ecological diversity and its values.
- d. evaluate the impact of each proposal upon the economic and social health of the region. A check should be made for each alternative's effect on such variables as transportation patterns, employment, and local businesses.
- e. carry the analysis of the costs and benefits of each alternative.
- f. evaluate how each alternative relates to the ongoing Malaysian policy of resource, social, and economic development.

In summary, each management alternative is considered in detail to determine its significant economic, social and the environment effects. This evaluation results in a comparative analysis of the aggregate effects of each alternative by the planning team.

8. Identify and recommend the preferred alternative

This step includes selection of the preferred alternative(s) to be presented in the preparation of Environmental Impact Statement. The selection of a preferred alternative will be based on the evaluations of both the planning team and concerned citizens during public participation program(s). Deciding what constitutes the best alternative should also be clarified by the costs and benefits associated with each alternative. Final responsibility for recommendation of the preferred alternative lies with the Director General of the Wildlife and National Parks Department. His charter is to select the alternative which, in his estimation, comes closest to maximizing net public benefits in an environmentally sound manner. In addition, essential material upon which this recommendation is based includes the interdisciplinary team's evaluation of the alternatives, the responsiveness of the alternatives to park needs and purposes, the suggestion of the Park Superintendent, public comments, and recommendation of the Park Director regarding the relative merits of the alternatives. The Director General's preferred alternative for management of the national park is the alternative identified as "Preferred" in the subsequent EIS.

In this step, the required elements of an EIS for the preferred alternative is included in order to comply with the general natural resource management policies and the Environmental Act of 1978. The proposed management plan and EIS documents will be submitted to the Ministry of Science, Technology and the Environment for comments on the adequacy of the EIS and the rest of the management plan.

9. Formal Review on the Recommend Management Plan

Once tentative approval by the Minister of Science, Technology and the Environment is gained, the proposed management plan and EIS documents are distributed to the affected parties for reviews and comments. Interested parties include:

- The public
- The Chief Minister or Governor

- Senator and State Legislative member where the park is located
- Heads of Department of Forestry, Agriculture, and Transportation of the affected states.
- The leaders of local communities.
- Malaysian Nature Society and other environmental groups.

In any public meetings at this stage, only issues, problems and planning and management solutions relating to local, region and federal issues will be examined. Such meetings do not address the overall objectives of the proposed management plan. After any modifications in response to public reviews have been made by the planning team, the proposed management plan and EIS documents must be submitted to the Minister again. The Minister then sends a copy of the proposed management plan to the National Planning Council, the National Parks Advisory Council, the Economic Planning Unit (EPU) of the Prime Minister Department, the Public Service Department, and the Treasury department. These councils and departments will examine whether the national interests and policies have been included in the proposed management plan. Once any required modifications are made and agreements have been reached, the Minister of Science, Technology and the Environment approves the plan. The Director General of the Wildlife and National Parks Department then sends one copy of the management plan to the Implementation and Coordination Unit (ICU) of the Prime Minister Department.

10. Implementation

This step is not initiated until the general management plan and the Environmental Impact Statement associated with it receives final comment from EPU and is approved from the Minister of Science, Technology and the Environment. Implementation needs have been anticipated during the previous steps of this planning process, and now guide the execution of the program. The implementation of the approved management plan then becomes the responsibility of the park su-

perintendent. Implementation involves the application of the prescriptions and management strategies included in the selected alternative for each of the defined management zones.

11. Monitoring and evaluation

This step is added to Malaysia's current planning process. Recommendations for monitoring and evaluation is guided by the ROS-LAC of the U.S. Forest Service, GMP of the U.S National Park Service, Canada's and the Latin America planning processes. The planning process begins with the identification of opportunities and problems; it also ends with a review of them. In brief, opportunities and problems guide the planning process, and these same problems must be evaluated to see if the preferred and implemented solution actually solves the problems (Williams 1987).

The purpose of monitoring and evaluation is to determine if the outputs and the effects projected during plan development and implementation are actually occurring at predicted levels. Monitoring also serves to indicate whether the management direction established in the General Management Plan is fully feasible when applied on the ground. If discrepancies between planned and actual outputs or effects are identified, the result could be minor revisions of the GMP, selection of different management strategies to achieve the same desired end, or conceivably a complete re-working of the entire plan.

6.2.3 Summary of new planning process

The steps of the recommended new planning process for Malaysian national parks are summarized as follows:

1. Identification of opportunities or problems;
2. Formulation of objectives;
3. Selecting planning criteria;

4. Collecting data and information;
5. Identify and describe possible management zones;
6. Formulation of alternatives;
7. Evaluation of alternatives;
8. Identify and recommend the preferred alternative;
9. Formal review on the recommend management plan;
10. Implementation; and
11. Monitoring and evaluation.

This recommended new planning process is a continuously repeating process through which information from the park level flows up to the departmental level, is incorporated into federal and states development programs, and then flows back to the park level. The needs identified by the general management plan are also incorporated in the development program of the Department of Wildlife and National Parks. The program is submitted to the Ministry of Science, Technology and the Environment as an aid in determining and justifying annual budgets. Allocations in the annual budget have a major effect on national park management activities. Through the overall planning process the annual budget is made more responsive to needs, purposes and capacities of the parks.

Since the Malaysian Government Development Plan is updated every five years, the General Management Plan for the national parks will be reviewed every five years, and is ordinarily revised on a 10-year cycle, or when changes in the Departmental Program significantly affect a park's GMP programs. It may also be reviewed whenever conditions or demands in the area covered by the GMP change significantly. Thus, the process ensures that the GMP is responsive to changing local conditions.

7.0 CHAPTER 7: SUMMARY AND CONCLUSION

This chapter summarizes the values of rational planning and points out its usefulness for the Malaysian Wildlife and National Parks Department. Malaysian national parks need management plans to facilitate, guide, and integrate both conservation and development issues. The chapter provides a definition of rational planning, a summary of how the recommended national park planning process represents a rational planning model, why such a rational planning model is good for Malaysian Wildlife and National Parks Department, and how the recommended rational national park planning process helps the protection and management of the nation's national parks.

7.1 Rational Planning

In order for readers to understand what is meant by rational planning, they must know what is meant by planning. There are many definitions of planning. Piven (1970) defined planning as the process of predicting future conditions based on existing fact, and then designing strategies to meet

the anticipated needs and changes. A second approach to defining planning emphasizes its anticipatory nature, and equates planning with "foresight in formulating and implementing programs and policies" (Hudson, 1979) or "advance laying out of a program of actions" (Levine, 1972). A more comprehensive definition of planning is given by Ernest (1986). Ernest's definition states that planning is a deliberate social or organizational activity of developing an optimal strategy of future action to achieve a desired set of goals and objectives, for solving novel problems in complex contexts, and is attended by the power and intention to commit resources and to act as necessary to implement the chosen strategy.

Rational planning also has several definitions. Weber (1981) defined rational planning as a procedure for achieving an objective by deliberately sequencing actions beforehand. His definition also included problem identification and analysis, and consideration of alternative plans from many different perspectives. Davidoff and Reiner (1962) stated that rational planning is a process for determining appropriate future actions through a sequence of choices. Ortolano's (1976) definition of rational planning focuses on a way of choosing the best means to attain a given end, emphasizing the use of scientific and technical knowledge to analyze and solve problems. It includes evaluation and choice among goals, by relating them to the individual's, organization's, and society's ultimate values. Ortolano's definition of rational planning is also identifies many steps in the planning process and the relationships among the steps.

An advantage of a rational planning process is that it follows a sequential procedure that allows the planner to freely return to previous steps and accept new information on issues, objectives, alternatives and impacts throughout the process. Rational planning involves the specification of objectives and the evaluation of alternative ways of meeting the objectives, and these steps are interrelated.

7.2 The Recommended National Park Planning Process is Rational

The recommended national park planning process represents rational planning, because of the way in which it approaches analysis of opportunities and solution to problems. The initial step of the recommended planning process, identifying opportunities and problems, is one of the most important steps. After a tentative listing of problems has been identified, the process allows the problems to be discussed further with the affected parties, such as state government and local people through the National Park Committee meetings. This permits the problems to be refined and clarified. In addition, the recommended planning process facilitates the identification of relevant opportunities and problems by focusing the planning effort on specific decisions that will need to be made.

The rational planning process also focuses on policy, goals and objectives. The recommended planning process considers the existing institutional and administrative programs and guidelines. Such guidelines include:

1. National development policies,
2. National land use policies, and
3. National resource management policies.

For this reason the recommended planning process focuses on the Wildlife Protection Act of 1976 and the National Park Act of 1980, and their mandates to protect, improve and manage wildlife habitat, protect wildlife species through habitat management, and provide recreational opportunities on park lands for the benefit of the people and future generations. These policies guide the planning process in identifying problems in step 1, in formulation of objectives in step 2, and the collection of data in step 3 of the process.

Rationality demands the systematic consideration and evaluation of alternative means of achieving preferred goals or objectives. The recommended planning process carries out this evaluation of alternatives in step 7 by considering four plan achievement categories: acceptability, completeness, effectiveness, and efficiency. Both the benefits and the costs likely to flow from the alternatives are measured in qualitative and quantitative terms; then these outputs are analyzed further to determine which alternative is most beneficial to the economic, social, and natural environment.

The last step of the recommended planning process (step 11 - monitoring and evaluation) facilitates feedback to the entire planning process. Monitoring is particularly important as it provides feedback on the effectiveness of the management actions employed, alerting the park superintendent to the need to consider or use other management measures

7.3 Rational Planning is Appropriate for Malaysia's Department of Wildlife and National Parks

The role of the national parks in Malaysia are ecosystem protection, wildlife management, economic development through tourism, and recreational development. In Malaysia, there are immediate economic and social needs (along with environmental concerns), because of relative poverty and increasing population. In order for Malaysia to achieve the development necessary for an enhanced quality of life and at the same time conserve its unique and scenic natural resources, an immediate need exists to integrate conservation and economic development into national park planning and management. There is a critical need to change public perception about the role and compatibility of national parks with the country's development requirements. To be effective, the Wildlife and National Parks Department cannot separate the designation of recreation areas, wildlife habitat areas, development and administration areas, and management of parks from the developed

world surrounding the parks. Instead, it must act in the context of the nation's particular needs. National parks need to meet a set of management objectives which give maximum flexibility, and environmental, social, and economic benefits to local and regional communities.

Rational planning seems needed and appropriate for Malaysian Wildlife and National Parks Department to solve these complex issues. This appropriateness is based on rational planning's strength in:

1. Problem Diagnosis

The rational planning process begins with some sense of dissatisfaction with the present condition. Definition of problems, however, depends on the analytical orientation of the individuals involved in the planning (Ortolano, 1976). Problem diagnosis begins to shape the path toward the solution. Problem diagnosis helps by identifying factors to be considered in alternatives from the perspectives of affected publics. The concerns, goals, and objectives of the public are expressed institutionally at the national and state levels in law and policies. The rational planning process allows the planning team to identify what are the mandates and constraints of existing law and policies before it invites the publics to voice their concerns. The problem definition becomes more clear and specific from interactions with local affected publics, and helps the planning team identify the factors which the public would consider important in formulation of alternative actions. In addition, the identification of issues and problems focuses the planning effort on the specific decisions that will need to be made.

2. Articulation of objectives

Objective relate to problem definitions. The recommended national park planning process is much more goal and objective-oriented than is the process currently in use. Since goals of the present national parks are already given, the Wildlife and National Parks Department needs to have good objectives to meet the goals. Depending on goals alone is not enough, because a goal is usually

not quantifiable and may not have a specific date of accomplishment. In contrast, objectives focus on measurable results that need to be achieved.

The recommended rational planning process gives objectives formulation high priority because without clearly identified objectives, the action plans that spell out projects, program and developments needed year-to-year may be inappropriate and inefficient. Objectives guide the development of proposals for national park areas that will have the most positive environmental, social, and fiscal impact on the park and the region.

3. Estimation and projection

Estimation in rational planning is essential for evaluating and selecting alternatives. Evaluation cannot be done without estimating the impacts of alternative proposals under possible future conditions. The estimation and projection of future conditions are part of the initial evaluation effort of the proposed planning process, and this is something that Malaysia needs.

To be more specific, estimation and projection have two values that could really help to solve current national park problems in Malaysia. First, it estimates demand for activities and services to predict future conditions and needs and to assess the park administration's capacity to meet projected needs. The other aspect of estimation and projection is foreseeing the outcomes and impacts of alternative proposals, in order to properly evaluate them. One way of doing this is by extrapolating from similar experiences in the past.

4. Formulation of alternatives

Formulation of alternatives in rational planning involves developing alternative plans that address the issues, problems, and objectives. To help insure that the "best" overall plan is developed, a range of alternatives should be developed based on different sets of probable conditions (Ortolano, 1976). The Wildlife and National Parks Department of Malaysia would likely make better and more defensible decisions if it considered several alternatives; this it has not done in the past. The

recommended planning process would formulate several approaches to problem resolution and then study them in detailed.

5. Evaluation process

Rational planning carries out an evaluation of alternatives on the basis of their acceptability, completeness, effectiveness, and economic efficiency in responding to planning objectives. Acceptability is determined by analyzing whether a plan is acceptable to and supported by a significant segment of the public. Completeness is determined by analyzing whether impacts on the economic, social and natural environment have been fully considered and whether actions necessary to assure full attainment of the plan have been included. Effectiveness is determined by analyzing the technical performance of a plan and its contributions to the planning objectives. Finally, efficiency is determined by analyzing whether a plan achieves the planning objectives and outputs in the "least-cost" way (Peterson, 1984).

This evaluation method is better than that used in Malaysia's national park planning. The current method utilizes a cost-effectiveness analysis in its evaluation step that is limited to comparing programs or services with similar outputs. It offers no way to aggregate the outputs of different types of programs into a common, comparable denominator. It also largely fails to consider acceptability to various segment of the public. The recommended rational planning process actively evaluates each alternative not only on the basis of a cost-effectiveness analysis, but also uses benefit-cost analysis to consider outputs that affect the many communities around the park. The combination of both analyses is a major concern in the evaluation of alternatives in step 7 of the process.

6. Logical and trackable approach

In the past, planning steps in Malaysia's national parks were seldom interrelated. The process did not facilitate input of new information resulting from decisions made early in the process. Also the process ends without a monitoring step. The recommended rational national park planning process

is good for Malaysia because it follows a logical set of sequential steps, with each step interrelated. At any point during the planning process, the planning team might back-track, re-trace, and rework decisions.

In summary, because it considers policies, goals, objectives, and a range of alternatives, a general management plan which results from rational planning provides the context and framework for day-to-day operations and decision-making regarding resource management, protection, recreation, development, and administration. Without properly prepared management plans through a rational planning process, national parks in Malaysia will probably suffer from inappropriate development, sporadic and inconsistent management, and will lack clear objectives. In addition, the output of the rational planning process, i.e, the general management plan, identifies the funds and personnel required for implementation of necessary actions.

7.4 How Rational Planning Helps Promote Protection and Management of Malaysia's National Parks

The fundamental goal of the recommended planning process for Malaysian national parks is to protect and manage park resources to meet public needs and to improve and maintain the quality of park resources for future generations. To meet this challenge, management must integrate biological considerations with economic, social and political factors to address both public welfare and the environment.

There are many ways that the recommended rational planning process can help the management of national parks in Malaysia. Some examples are:

1. Reducing primary threats to the parks

The primary threats to the parks are poaching, agriculture development surrounding the park boundaries, water pollution, development-oriented pressures that call for timber harvesting in the park areas, poverty, and political pressures.

The recommended planning process can defend the parks against these threats by first inviting the local people into the planning process. The process not only considers their major concerns about the park, but the process also examines how the public could possibly contribute to reduce the present threats. For example, water pollution as a result of agriculture development has created a major threat to the park. In solving this threat, the recommended rational planning process is premised on the idea that there is a collective "Public interest " that can be identified through the planning process. This "Public interest" represents the aggregation of all the values of the community. This "Public interest" likely includes park user groups who recreate on park waters and therefore value clean water. Local residents not engaged in agriculture also likely value clean water. Through the rational planning process, views of constituencies such as these will become known. This input into the planning process and their support when park values are threatened will help park managers maintain clean waters.

2. Providing a broad range of objectives

The present objectives of many Malaysian national parks are narrow in its perspectives. For example, many plans emphasize recreational development and tourism. Yet, recreational development and tourism are often not achieve the ultimate goals of the Wildlife and National Parks Department to provide benefits equally to the society. Even worst, a steady increase in demand from local citizens and school children who want to enjoy natural scenic areas and wildlife in the parks is not being met.

A broad range of objectives might deflect criticism that national parks are too narrow in their benefits. The recommended planning process facilitates the development of various objectives in the park plan. The objectives of the general management plan would emphasize equally recreation,

tourism, management of wildlife habitat, and protection of ecosystems. These objectives would encourage local people to use and benefit from the natural environment, either through controlled enjoyment of wildlife and vegetative resources, recreational opportunities, or by creating job opportunities that are found on national park lands.

Formulation of several objectives for the parks can be done by several parties, which include local citizens, interest groups, state government representative, and federal government agencies. For example, a broad array of citizen groups and governmental agencies might develop a plan for more recreation for local use. A few years after implementation of the approved plan, an interest group might lobby for more emphasis on wildlife than on recreational use. Such complaints or threats could be more easily deflected because mutual agreement had been achieved early in the problem analysis phase of planning between the affected parties and the planning team on what was an appropriate level of recreational development.

3. Considering regional resource interrelationships

The current national park planning process in Malaysia does not consider plans of others. Current planning teams have not included state and local agencies' plans or parts of plans when addressing the planning objectives of a park area. Thus, the planning team's judgment on which proposal is the best does not reflect issues like regional growth.

A strength of rational planning is that it facilitates consideration of regional resources interrelationships. Throughout the recommended rational planning process, the park is considered within the broader context of the surrounding region. Because resource protection issues frequently are not confined by park boundaries, cooperative planning is needed to integrate the park into its regional environment and to address adjacent land issues. The recommended planning process ensures early coordination of planning activities with other federal agencies, state and local governments and other neighboring landowners and concerned parties.

Finally, at step 9 of the recommended rational planning process, a formal review on the recommended management plan once again facilitates consideration of the impact of the park plan on surrounding lands and impacts of these lands on the park.

4. Facilitating the evaluation of impacts

Planners of national parks in Malaysia faces major environmental impact problems. This has resulted from inappropriate allocation of recreational development zones or areas. Many of these zones or areas are heavily used, and as a result several areas show severe signs of soil erosion.

Rational planning facilitates the evaluation of recreational impacts on social, economic and natural environment, and this helps the management of national park. The reason for an evaluation of impacts is not only for the planning team to predict possible impacts, but for the planning team to assign appropriate management actions to protect the park and support the region in terms of economic, social, and environmental benefits. The planning process facilitates achieving these multiple benefit by collecting and integrating a range of data about natural and human elements of the park. Such elements include demographic characteristics, regional economy and land use trends, access and regional transportation systems, the type of wildlife habitat, tourism and recreation. The data form the basis for determining the beneficial and adverse contributions of various alternatives. If adverse impacts are anticipated from implementation of the preferred alternative, mitigation measures can be taken to replace something that has been lost due to construction or development of the project.

5. Coordination with general development plans of the state government

During meetings for preparing state development plans, major consideration is typically given to agricultural development. If a national park is bounded by such agricultural development schemes, possible impacts of existing management programs in the park on the agricultural development or the agricultural development on the park could be a grave concern. With a general management

plan in place, the park superintendent and the Director of the Wildlife and National Parks Department at the state level have already equipped themselves to meet this challenge. Coordination among state government agencies has already been accomplished in the formal review process and the regional integration effort in plan preparation. Any new plan of other agencies must also consider the existing national park management plan. This consideration would likely enhance the protection and management of Malaysian national parks.

6. Support from key constituencies

The National Park Act of 1980 created a National Parks Advisory Council with members from many fields and interests. There are the State Secretary of Pahang, State Secretary of Kelantan, State Secretary of Terengganu, Chief Secretary of Ministry of Finance, Chief Secretary of Ministry of Finance, Chief Secretary of Ministry of Culture and Tourism, Chief Secretary of Ministry of Science, Technology and Environment, Director General of the Economic Planning Unit of the Prime Minister Department, Director General of Forestry, Director General of Wildlife and National Parks Department, Malaysian Nature Society, World Wildlife Fund for Nature in Malaysia, and Consumer Association of Malaysia. The Act also give a mandate to the state governments to form National Park Committees whose members come from the state government agencies and interest groups. They are State Director of Forestry, State Director of Agriculture, State Development Officer, State Treasurer, Malaysian Nature Society and Consumer Associations. The functions of these two bodies are to give advice to the Minister of Science, Technology and Environment on the management and development of national parks throughout the nation; and to review any park proposal.

Rational planning facilitates the incorporation of views of these tow advisory bodies. Thus, members of these two groups and the constituencies that they represent are likely to support rational park planning. With such support, park superintendents are more likely to "Win" when their actions are challenged.

The recommended national park planning process includes the National Park Committee's reviews and comments in steps 1 and 9, and the National Parks Advisory Council's reviews in steps 3 and 9. Their involvement in the planning process provides a more secure and firm protection and management of national parks in Malaysia.

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Appendix A. The List of the Ministry of the Malaysian Government

1. The Prime Minister Department,
2. The Ministry of Agriculture,
3. The Ministry of Culture and Tourism,
4. The Ministry of Defense,
5. The Ministry of Education,
6. The Ministry of Energy, Telecommunication and Posts,
7. The Ministry of Finance,
8. The Ministry of Foreign Affairs,
9. The Ministry of Health,

10. The Ministry of Home Affairs,
11. The Ministry of Housing and Local Government,
12. The Ministry of Information,
13. The Ministry of Justice,
14. The Ministry of Labor,
15. The Ministry of Law and Regional Development,
16. The Ministry of National and Rural Development,
17. The Ministry of Primary Industries,
18. The Ministry of Public Enterprises,
19. The Ministry of Science, Technology and the Environment,
20. The Ministry of Trade and Industry,
21. The Ministry of Transport,
22. The Ministry of Welfare Services,
23. The Ministry of Works,
24. The Ministry of Youth and Sports

Appendix B. Units Of The Prime Minister Department of Malaysia

1. Administration and Finance Division,
2. Cabinet Division,
3. Ceremonial Division,
4. Economic Planning Unit (EPU),
5. Federal Translation Bureau,
6. Implementation Coordination Unit (ICU),
7. International Conferences Unit,
8. Islamic Affairs Division,
9. Malaysian Administrative Modernization and Manpower Planning Unit,

10. Management of Government Building Division,

11. National Family Planning Board,

12. Nuclear Energy Unit,

13. Socio-Economic Research Unit.

Appendix C. Activities of the Ministry Of Science, Technology and the Environment

1. To promote, coordinate and carry out scientific and industrial technology research;
2. To advise the government on policies and planning for research and development of Science and Technology;
3. To advise the government on matters pertaining to nuclear science;
4. To foster cooperation and promote coordination with foreign countries and institutions in the field of Science and Technology;
5. To promote, establish and encourage standards for industrial products with a view of ensuring that local and exported products are of high quality;
6. To improve and provide scientific analysis, investigation and advice to all ministers, government departments and agencies, statutory bodies and other institutions which require these services;

7. To control and monitor pollution, and to conserve and maintain the environment;
8. To conserve wildlife and to coordinate the management of National Parks.

Appendix D. National Parks Advisory Council

This council was formed on May 24, 1989 by the Minister of Science, Technology and the Environment at the Wildlife and National Parks Department Headquarters in Kuala Lumpur. This council is under the supervision of the Conservation Section of the Ministry of Science, Technology, and the Environment.

Members of the council are:

1. State Secretary of Pahang
2. State Secretary of Kelantan
3. State Secretary of Trengganu
4. Chief Secretary of Ministry of Finance
5. Chief Secretary of Ministry of Culture and Tourism
6. Chief Secretary of Ministry of Science, Technology and the Environment

7. Director General of the Economic Planning Unit of the Prime Minister Department
8. Director General of Forestry
9. Director General of Wildlife and National Parks Department
10. Malaysian Nature Society
11. World Wildlife Fund for Nature in Malaysia
12. Consumer Association of Malaysia.

Appendix E. Interdisciplinary Team for the Wildlife and National Park Department of Malaysia

One representative from each of the following division or agencies make the interdisciplinary team:

1. The National Park Division of the Wildlife and National Parks Department,
2. The Development Division of the Wildlife and National Parks Department,
3. The Management Division of the Wildlife and National Parks Department,
4. The Research Division of the Wildlife and National Parks Department,
5. The Forestry Department (State and Federal),
6. The National Park Committee of the affected state,
7. The Ministry of Science, Technology and the Environment,
8. Interest groups and private organizations.

Vita

Ebil bin Yusof was born in Muar, Johore, Malaysia on February 12, 1955, the son of Haji Yusof bin Haji Sadi and Ramlah bte Omar. He graduated from Mara Institute of Technology, Shah Alam, Selangor, Malaysia in 1977 with a Diploma in Forestry and from the University of Wisconsin - Stevens Point in May 1988 with a Bachelor of Science Degree in Forest Management.

He has been employed by the Wildlife and National Parks Department of Malaysia since 1977. From 1977 to 1980 he was the Deputy Research Officer headquartered in Kuala Lumpur. From 1980 to 1984 he was the Deputy Director of the Wildlife and National Parks Department in the state of Pahang. From 1984 to 1986 he was the Director of the Wildlife and National Parks Department in the state of Negeri Sembilan. From 1987 until the present he has been on study leave in the United States of America. He is married to Rosnah bte Saban and has one daughter, Diana Shahida, and one son, Faizal Reza.