

A Review of the Protected Area System of Thailand

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GENERAL INFORMATION

Thailand has an area of 513,115 km², and is bordered by Cambodia, Laos, Myanmar and Malaysia. The country is situated between two major biogeographical regions, the Indochinese in the north and Sundaic in the South, thus endowing the Kingdom with habitats that contain approximately 7% of the world's flora and fauna (Luangjame et al, 1997).

Thailand lies at the cross-roads of the Indo-Malayan Realm, and does not have any unique floristic elements. Majority of local plant species are closely related to those in neighboring countries. As a result, Thailand is considered a collective center of botanical diversity from three major regional elements: Indo-Burmese, Indo-Chinese and Malesian. Identified flora numbers 12,253 species, which are estimated to account for 80% of the total plant species of the country. Recorded flora includes 9,441 vascular and about 2,154 non-vascular plants. Orchids are the most diverse plants in the country with 1,116 species, 177 of which are endemic (OEPP, 2000).

In terms of fauna, it is estimated that 87,500 species exist in Thailand, 18,073 of which have been identified. There are 8,705 invertebrates, majority of which are insects, and 4,072 vertebrates. There are 292 mammals, including bats, ungulates, primates, flying lemurs, pangolins, whales, dolphins and dugongs. There are also 962 bird, at least 123 amphibian, and 318

reptile species.

Since Thailand shares its flora and fauna with many of its neighbors, the number of endemics is not as high as in Malaysia or Indonesia. Recent research by the Flora of Thailand project identified 120 endemic plant species. Endemic fauna include 141 vertebrates, with 6 mammals, 67 subspecies of birds, 29 fishes, 31 reptiles and 8 amphibians (OEPP, 2000).

Threatened species include 457 plants and 554 animals (World Con-

(WCMC, 1997). Over half of the national forest reserve has disappeared and what remains can be found only in national parks and wildlife sanctuaries. As a result of continued habitat loss, species populations have become increasingly vulnerable to overexploitation or poaching.

Marine habitats, mangrove forests and wetlands are threatened by shrimp farming, pollution and degradation. Over-harvesting and the use of harmful fishing methods have severely depleted marine diversity. Wetland and coastal ecosystems are especially vulnerable to environmental changes outside their immediate boundaries. Industrial and domestic wastes pollute rivers, lakes, and



Salawin National Park in Mae Hong Son Province

Photo courtesy of Royal Forest Department

servation Monitoring Center, 1995). Threatened vertebrates number 554, with 114 mammal, 194 bird, 41 reptile, 26 amphibian and 179 fish species needing special protection.

As with the rest of the world, biodiversity in Thailand is undermined by a number of threats. Forest resources are depleted by a combination of over-harvesting of timber, increasing population pressure and poor land use practices. Forests are illegally-logged, and converted to agricultural lands, mining areas and plantations. From an estimated forest cover of 53.3% (273, 508 km²) of the total land area in 1961, only 25.6% was left in 1995

coastal habitats, reducing and destroying biodiversity. Waters are also contaminated by sedimentation from forest clearance, fertilizer run-off and industrial effluents.

An additional controversy is the pressure on resources exerted by around 12 million people residing in the forestlands of the country. It is estimated that a significant percentage of these forest residents occupies vast areas of the country's national parks, wildlife sanctuaries and vital watersheds. According to the Thailand Development Research Institute, more than 20% of the country's 56,000 villages are located within forest reserves (Gray, 1991).

Certainly, biodiversity loss is an inevitable consequence of human activity. Recognition of the reasons behind this loss should provide resource managers with lessons on how to minimize and conserve the diversity of biological resources without compromising development objectives.

THE PROTECTED AREA SYSTEM Legal Framework

Forest and wildlife conservation in Thailand has a long history, dating back to the creation of the Royal Forest Department (RFD) in 1896 and the enactment of the Wild Elephant Protection Law of 1900. Protected areas legislation, on the other hand, began in the 1960s with the promulgation of the Wild Animal Preservation and Protection Act (1960) and the National Park Act (1961). The former provided protection for wild animals in general by establishing wildlife sanctuaries and non-hunting areas. The Act also gave total protection to nine species, specifically: wild water buffalo, Sumatran and Javan rhinoceros, kouprey, Eld's deer, hog deer, Schomburgh's deer, serow and goral. Limited hunting, capture and trade were permitted for other species. The National Park Act laid down provisions for the creation of national parks, which contributed to increased environmental awareness in Thailand. Forest reserves were then established through the National Forest Reserves Act of 1964. The Act also states that it is forbidden to hold, possess or clear land, burn forest, work timber, gather forest products or any other act that may damage the forest.

In 1988, increased deforestation caused a devastating flood in southern Thailand and led the government to impose a ban on further logging of natural forest in 1989.

The development of other conservation laws and policies also affected protected area management. The 1985 National Forest Policy

first provided the basis for a protected area system and targeted the maintenance of 40% of the total land as forest areas. This would be classified into protected (15%) and productive (25%) forests. This ratio was then reversed in the 7th National Economic and Social Development Plan (NESDP) for 1992-1996. The Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (1997-2016) currently targets the increase of forest cover to 50% of the total land area, with 30% to be designated as protected and 20% as productive forest (OEPP, 1997).

The 1992 Enhancement and Conservation of National Environmental Quality Act provided policies for the conservation of environmentally protected areas (Chapter III, Part 3), which include:

- Watersheds;
- Unique natural ecosystems;
- Fragile ecosystems that are sensitive and vulnerable to destruction or human impacts;
- Areas with aesthetic values.

The designation of conservation areas is usually recommended by the National Environment Board. Plans for these protected areas should include:

- Land use prescriptions to preserve the environment;
- List of prohibited activities;
- Types and sizes of activities that are allowable subject to an environmental impact assessment;
- Management approach specific to the site;
- Other appropriate protective measures.

In 1993, the Thai Forestry Master Sector Plan set down the concept of a protected area system, which was based on the 1985 Thai National Forest Policy.

Among the most recent plans compiled by the government is the National Policies, Measures and Plans on the Conservation and Sustainable Utilization of Biodiversity

(1998-2002), which was approved as an administrative framework to implement the Convention on Biological Diversity. Seven strategies were outlined in the Plan for implementation:

- Build capacity of institutions to conserve biodiversity;
- Enhance efficiency in management of protected areas;
- Improve incentives for conservation of species, population and ecosystems;
- Conserve species, populations and ecosystems;
- Control and monitor activities that threaten biodiversity;
- Encourage traditional cultural management of biodiversity;
- Promote cooperation between international and national agencies in the conservation and sustainable utilization of biodiversity.

Aside from local legislation, Thailand is also party to a number of international agreements that conserve biodiversity (**See Box 1**).

Box 1: Status of International Agreements

- CITES - ratified in 1983
- Conservation on Biological Diversity - signed in 1992
- Agenda 21 - adopted in 1992
- RAMSAR Convention - ratified in 1998

Protected Areas

The Wildlife Protection and Reservation Act (1992, improved) and National Parks Act (1961) provide the legal basis for protected areas, which are as:

- National park - area with beautiful landscapes, important history, rare plant or animal species and preserved in its natural state for public education and enjoyment;
- Wildlife sanctuary - declared for the preservation of wildlife so they can freely breed in a natural environment;
- Forest park - area with attractive scenery developed for public recreation, but is

too small to be a national park;

- Non-hunting area - designated for the protection of specific wildlife species but smaller than wildlife sanctuaries;
- Biosphere reserve - intended to conserve the integrity and genetic diversity of communities of plants and animals within natural ecosystems;
- World Heritage Site - area with unique natural and cultural values, which are considered to have outstanding universal significance;
- Watershed Class 1 - designated to have permanent forest cover because of its significance as a head watershed;
- Botanical garden - collections of indigenous and exotic species with economic value, planted for research purposes and ex-situ conservation;
- Arboretum - smaller than botanical gardens and established to collect various plant species, especially economically useful flowering plants;
- Conservation mangrove forest - excluded from utilization to serve as shelter and nursery ground for marine flora and fauna;
- Natural conservation area - comprise lands, mountains, swamps, lakes and interesting morphologies that should be protected from economic and social exploitation.

As of 1997, there were 286 protected areas under these various categories, according to the National Resources Conservation Office of the Royal Forest Department.

INSTITUTIONAL SET-UP

Protected area management is largely the responsibility of the **Royal Forest Department (RFD)** of the **MINISTRY OF AGRICULTURE AND COOPERATIVES (MOAC)**. The Department

was established in 1896 to protect and manage all forests owned by the state, as well as implement various laws and policies related to forest conservation and management. RFD facilitates protected area management through its Natural Resources Conservation Office, which is divided into the following:

Natural Park Division - tasked with:

- regulating the use of parks and their resources in accordance with the National Park Act of 1961;
- developing in the park system consistent with management objectives;
- maintaining natural resources in the park;
- providing appropriate recreational activities and facilities;
- introducing and conducting interpretative programs to build visitors' understanding and appreciation of park values.

Marine National Park Division - responsibilities are to:

- implement the National Park Act, National Forest Reserve Act, Wildlife Reservation Act and other relevant legislation;
- apply marine management principles in the development of conservation guidelines;
- recommend sustainable use of park resources incorporating marine park management principles and existing government policy;
- conduct studies on park resources and disseminate information to the public to create awareness on the need to protect the environment.

Wildlife Conservation Division - the division aims to:

- protect wildlife and increase populations following the Wildlife Preservation and Conservation Act of 1992;
- protect wildlife habitats;
- educate the public regarding wildlife protection.

Watershed Management Division- this division largely focuses on the protection and rehabilitation of denuded watersheds, most of which are located in national parks, forest reserves and wildlife sanctuaries. Alternative land use and agricultural practices have been introduced to discourage shifting cultivation. In the 1980s integrated watershed management approaches were established to elicit cooperation from people's organizations and other concerned agencies.

Due to the number of conservation laws and policies in Thailand, other organizations working on biodiversity conservation have considerable impact on protected area management. These organizations are mainly under the jurisdiction of the **MINISTRY OF AGRICULTURE AND COOPERATIVES (MOAC)** and the **MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT (MOSTE)**. Aside from the RFD, agencies under MOAC are:

Department of Fisheries (DOF)

- Fisheries management in Thailand started in 1901 when taxes were collected to ensure the steady contribution of fish supply for national consumption and export. The responsibilities of the department are to:

- Implement fisheries-related acts;
- Conduct studies, researches, and experiments in every field of fisheries;
- Explore and analyze fishing grounds beyond Thai waters and promote fisheries cooperation with other nations;
- Develop occupations relating to fisheries.

National Resources and Biodiversity Institute (NAREBI)

- NAREBI was established in 1998 to provide MOAC with more flexibility in implementing natural resource management policies. Environmental management is largely segmented by type of resource, objectives or assignment of responsibilities to agencies as specified by law, resulting in a lack of unity of direc-

Box 2: Ongoing DANCED Projects

Organization	Project Title	Duration
EC	Capacity building to support training and education on coastal biodiversity in Ranong	2000-2003
	Local Participation in Highland Forest Conservation Project	1999-2003
	Sustainable Management of Phu Khleac Wildlife Sanctuary through Community Participation	1997-2004
UNEP	Thailand Biodiversity Country Study	1994-1997
	Biodiversity Data Management Project	1995-1998
DANCED	Western Forest Complex Ecosystem Management Project	1999-2002
	Model Marine National Park Management Project	2002-2006
CIDA	Tree Link	1998-2003
	Canada-Thailand Trilateral Environment Project	1995-2000
UNDP	10-Year Review of Agenda 21 for Thailand: A National Strategy for Sustainable Development	15 months; in the pipeline
	Mekong River Basin Wetland Biodiversity Conservation and Sustainable Use Program	1999-2001
CARE	Integrated Natural Resources Conservation	1994-1999
WWF Thailand	Wildlife Research in Western Forest Complex	1991-1997
	Asian Elephant re-introduction and Conservation Project	1997-2000

tion in the formulation of policies and projects. NAREBI aims to facilitate a new concept of ecosystem management to reduce the institutional overlap and duplication of efforts among various agencies.

Agencies under the **MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT (MOSTE)** include:

Office of Environmental Policy and Planning (OEPP) - The OEPP aims to develop environmental policies and plans in accordance with the Enhancement and Conservation of National Environmental Quality Act of 1992. It acts as the coordination center for natural resources management to encourage national sustainable development. The OEPP is also the National Biodiversity Reference Unit (NBRU) of Thailand and thus interfaces the ASEAN Regional Centre for Biodiversity Conservation (ARCBC) with national authorities and institutions in biodiversity conservation efforts in Southeast Asia.

National Committee on the Conservation of Biological Diversity - Created in June 1993 under the National Environment Board, the Committee is tasked with the formulation of plans to implement commitments to the Convention on Biological Diversity, including the National Policies, Measures and Plans on the Conservation and Sustainable

Utilization of Biodiversity (1998-2002). The Committee also coordinates the responsibilities of other biodiversity committees under a number of departments, including the Royal Forest Department, the Department of Fisheries and the Department of Agriculture.

CONSERVATION PROJECTS

A number of international organizations have actively contributed to the implementation of Thai environmental and biodiversity conservation efforts (**See Box 2 for list of projects**). These organizations include, among others:

European Commission – Cooperation funded by the EC dates back to a rural development program in 1997. Current efforts focus on protecting the environment and stimulating the rural economy.

United Nations Environment Programme (UNEP) – supports implementation of commitments to the Convention on Biological Diversity through the UNEP Guidelines for Preparation of the Country Study on Biological Diversity (1991-1992) and other projects.

Danish Cooperation on Environment and Development (DANCED) – initial projects also focused on supporting the implementation of the Convention on Bio-

logical Diversity.

Canadian International Development Agency (CIDA) – majority of biodiversity-related activities of CIDA concentrates on the rehabilitation of natural habitats or conservation of specific components of biodiversity. These include the restoration of forests with cultural importance in Maha Sarakam province in 1996 and the ASEAN Forest Tree Seed Center Project executed by the Royal Forest Department from 1981-1997.

United Nations Development Programme (UNDP) – concentrates funding on initiatives that emphasize the sustainable use of natural resources, several of which were co-sponsored by the Food and Agriculture Organization of the United Nations and the Global Environment Facility.

IUCN - The World Conservation Union – IUCN's relationship with Thailand began in the 1960s when it supported the Royal Forest Department in the creation of the National Parks Act. Current activities will focus on the revision of the protected area system and ratification of the Convention on Biological Diversity.

CARE Thailand – CARE is one of the world's largest non-government international relief and devel-

opment organizations. It has become a leader in sustainable development and emergency aid, reaching tens of millions of people each year in more than 60 countries in Africa, Asia, Europe and Latin America.

World Wide Fund for Nature Thailand - WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

ASSESSING THE PROTECTED AREA SYSTEM

A Review of Protected Area Systems of the Indo-Malayan Realm (WCMC, 1997) states that the Thai national park system expanded from 16 sites (9,357 km²) in 1979 to 45 sites in (24,222 km²) in 1985. By May 1995 some 105 national parks had been established, including 24 with a marine component, covering 66,185 km² (12.8% of total land area). At the same time there were 38 wildlife sanctuaries, covering 29,185 km² (5.7%) of the national land area.

In 1997, existing national parks and wildlife sanctuaries covered 18.5% of the total area of the country, but this includes quite a lot of degraded and cleared forest. Only 8.2% of the country consists of protected natural habitat.

The Review reveals that in terms of habitat coverage, the system seems to be quite satisfactory and there are no obvious gaps. It recommended the addition of some additional lowland wet evergreen forest as well as more areas of freshwater swamp and mangroves so that the protected area system could be more representative of the various ecosystems of the country.

In terms of protected area management, there seems to be some confusion in the management structure despite the identification of the Royal Forest Department as the primary agency. Over the years,



Photo by Oliver Pughier

Women of the Karen tribe

a number of conservation policies and plans have been developed across various ecosystems, and their implementation has been divided among a host of agencies under the Ministry of Agriculture and Cooperatives and the Ministry of Science, Technology and Environment. Added into the mix of overlapping environmental plans and policies are Committees and Institutes that are largely expected to conduct the same tasks. These include the National Resources and Biodiversity Institute (NAREBI), the National Committee on the Conservation of Biological Diversity, and the Office of Environmental Policy and Planning (which serves as the National Biodiversity Reference Unit for ARCBC), which all act as coordinating centers for national biodiversity conservation activities.

Another major issue is the raging controversy on how to address the fact that millions of people are living within forest boundaries, including protected areas.

There is a very strong sense of state ownership of forests in Thailand, which began with the creation of the Royal Forest Department (RFD) in 1896. Its mandate was to manage the country's forests, and as a result, their ownership reverted

back to the King from feudal chiefs who held them earlier. State ownership of forests was further strengthened with the Forest Act of 1941, which declared that any land at the time without ownership rights would be considered as forest and be managed by the RFD. This created and continues to be a controversial issue among rural populations, who consider these forests public land (Buergin, 2000).

National forest policy initially revolved around a "wilderness approach," which recommended the total exclusion of people from protected areas. This is no longer possible given the large population dependent on forest resources and the need to balance its rights to land and traditional resource use. The history of conflicts over access to natural resources is rooted in the process of villagers' "encroachment" of forestland. Changes in land allocation and uses over the years have also resulted in pronounced imbalances in power relations between state, private sector (largely through commercial farmers and land developers) and forest dwelling ethnic minorities.

THE WAY FORWARD

Offhand, the easiest way out of this confusion is to streamline the management structure to manage protected areas in the country. This would reduce overlapping functions and duplicated efforts as well as facilitate the implementation of management approaches to protected areas in line with internationally-agreed-upon principles.

In terms of resolving the issue regarding hilltribe peoples and their rights to resource use, most advocate the legal recognition of community forest practices in Thailand. Indigenous forest management has a long history in inherently diverse ethnic cultures. Recorded evidence of indigenous forest management systems in Thailand was discovered to be over 700 years old, and was

traditionally practiced without any written document. Current community forest management strategies merge indigenous forest management and approaches that respond to changing ecological and socio-economic conditions, and emphasize access to and control of forest resources. At present, community forests in Thailand are not recognized by the Thai legal system although there are *de facto* practices under a common property resource regime.

Successful community forest movements have developed into region-based community forest networks. There are currently 86 such networks in the northern, and 18 in the northeastern region of Thailand (Buergin, 2000).

In 1990, the government drafted a Community Forestry Bill that retains state decision-making power in relation to forest resource use. This prompted the drafting of a people's version of the bill, emphasizing local rights in communal forest management. Today, the Bill has undergone seven revisions, and has yet to settle the contrasting views of the state and various people's organizations regarding forest resource rights. Conflicting conservation ideologies (people and forest can or cannot co-exist) and different value priorities (environmental conservation versus social justice) also color the issue, dividing the NGO movement as well as civil society.

NGOs in Thailand are often categorized into 'dark green' conservation orientated NGOs and 'light green' or people orientated NGOs (including socially concerned aca-

demics), who obviously have different views regarding the issue. The extent to which the two sides will succeed in realizing their interests in the Community Forest Bill, or whether the bill will be passed at all, remains to be seen.

Experiences in some protected areas however show that it is imperative that local communities share economic benefits offered by national parks and other protected areas. Some sanctuaries recruit employees from local villages. In others local fishermen are hired to take visitors around to view the rich bird life. Rangers at some parks encourage fishermen to provide services to tourists rather than over-fish the sea. Locals are sometimes hired as porters to carry hikers' gear up the mountains. As a result some have become so protective of the sites that they report violations to proper authorities.

In planning for the conservation of ecosystems and biodiversity, these issues have to be carefully assessed and a practical solution has to be proposed for consideration, support and execution by authorities and other concerned parties. An ongoing review (**see Box 3**) of protected areas and their contribution to sustainable development is a step in the right direction. Initially results of the review state that over 17% of the country is covered by protected areas, with a target of 25% by year 2005. A field study is being conducted in the eastern forest complex of Thailand as part of the review and a roundtable discussion has been conducted with review partners

from government, protected areas, donors and non-government organizations. Activities and discussion that will be undertaken for the review will be used in preparation for the World Parks Congress in September 2003. Such efforts bode well for the future of the protected area system of Thailand. ■

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Box 3: A Critical Review of Protected Areas and their Role in Socio Economic Development of the Four Countries of the Lower Mekong Region

The natural resources of Cambodia, Lao PDR, Thailand and Vietnam have been steadily degrading despite the expansion of the protected area networks in the past few decades. The review, which can be accessed through <http://www.mekong-protected-areas.org>, draws together protected area managers and economic planners to analyze current approaches to protected area management and investigate ways to integrate them more effectively for socio-economic development. Information will be gathered through the conduct of field studies, coordination with national networks, presentation of national reports and exchanges in regional workshops. The review process will culminate in the presentation of national reports at the World Parks Congress in Durban, South Africa in September 2003.