

Threatened Species Listing in Indonesia: Status, Issues and Prospects

Ria Saryanthi and Johannes Subianto

INTRODUCTION

In Indonesia, biodiversity utilization is still based on economic considerations, with less attention being paid to ecological and environmental health. An increasing human population, and questionable land-use systems, along with economic and development policies, have resulted in increasing threats to ecosystems and wildlife species. Pressures on the natural environment in Indonesia are varied. They include poverty, population pressure, exploitative forest utilization and agricultural development. These factors can in turn lead to destruction and degradation of habitats, pollution and over-utilization of natural resources.

It has been estimated that there may be as many as 30 million species of plants and animals worldwide, of which only five per cent have been described so far and that 25 per cent of all species may become extinct by the year 2000. Many of the undescribed species are small and apparently insignificant but may be crucial to many life-supporting processes. Conservation measures are therefore a matter of urgency. It is certain that a number of Indonesian animals have already become extinct. Since the Pleistocene period (8,000-100,000 years ago), 35 mammals have become extinct in Java, including 20 that still occur elsewhere in South East Asia. As habitat loss continues, more extinctions can be expected. The Javan tiger became extinct last decade and at least 18 species of birds formerly found in Java have not been recorded recently, including the endemic Javan Lapwing, *Vanellus macropterus*.

Species population already threatened by habitat loss and disturbance are particularly vulnerable to pressures such as over-exploitation or poaching. Marine turtles, maleo birds, parrots and birds of paradise are threatened by over-exploitation.

Introduction of exotic species can also be a serious threat to native species. The introduction of exotic fish species to isolated lake systems, such as the Malili lakes, may lead to the extinction of endemic fishes. The endemic fish *Weberogobius amadi* is already lost from Lake Poso (Sulawesi).

The exceptional biodiversity resources of Indonesia must be utilized optimally in order to increase the quality of life of the Indonesian people in the short- and long terms. This means that utilization should be based not only on economic consid-

erations but also on ecological and environmental principles, and should be underpinned by the principle of sustainable use.

THREATENED SPECIES LISTING

The Indonesian government has developed a list of protected species included in the government regulations for biodiversity conservation efforts and sustainable utilization.

In 1999, the government declared two new regulations on preservation of plant and animal species (PP No.7/1999) and utilization of wild plant and animal species (PP No.8/1999). This covered more than 500 protected species. The animal species list covered about 400 species of mammals, birds, reptiles, insects, fish and invertebrate (anthozoa and bivalvia); and the plant species list covered about 100 species of palms, rafflesia, orchids, lotus and dipterocarps.

The criteria that were used for the protected species lists are:

- Small population;
- A sharp decline in the number of individuals in the wild population;
- Limited area of distribution (restrictedness, local endemism).

The list of protected species was prepared by the CITES Management Authority (DGPKA) and the CITES Scientific Authority (Indonesian Institute of Sciences/LIPI) with inputs from international and local non-government agencies who collaborate with them.

International and Indonesian conservation NGOs and government agencies have collected data on the status and distribution of wildlife species. Some of them have developed threatened species databases using the IUCN criteria. These include:

- Yayasan WWF Indonesia (Jakarta) has developed threatened species data on mammals, birds and marine wildlife;
- Wetlands International-Indonesia Programme (Bogor) has developed threatened species databases on waders, waterbirds, turtles, otters and sites;
- BirdLife-Indonesia Programme (Bogor) has developed databases on threatened birds, sites and habitats;
- Data on plant distribution is kept in the Herbarium Bogoriense, Bogor;

- The Indonesian Institute of Sciences has developed databases on a wide range of wildlife species.

Some conservation NGOs have initiated programs of conservation work involving government agencies and local communities on some taxonomic groups, such as primates (Balikpapan Orange Utan Society, Yayasan WWF Indonesia, Wildlife Foundation Indonesia, KSBK), rhinos (Yayasan Mitra Rhino), birds (Pantau, BirdLife-Indonesia Programme) and tigers. Information from these programs has been published as reports or species action plans and distributed at national and international level.

INDONESIA'S BIODIVERSITY

Indonesia, which covers only 1.3 per cent of the Earth's land surface, has an abundance of wildlife species and ecosystems, some of which are found nowhere else in the world (Table 1).

The richness of Indonesian bird species illustrates the importance of Indonesia's biodiversity in a global context. Indonesia ranks third in the world for bird diversity and first for bird endemism. There are 1,531 species of birds, which have been recorded in Indonesia and 397 of these species are endemic to the country. Research reveals that high diversity in birds correlates with high diversity in other wildlife groups and habitat diversity.

Similarly, most of Indonesia's insect fauna is endemic to the archipelago, with many genera confined to individual mountain tops. Because of their localized distribution, many endemics are threatened by habitat loss and/ or over-exploitation. The three major biodiversity centers are: Irian Jaya (high species richness and endemism); Kalimantan (high species richness, moderate endemism); and Sulawesi (moderate species richness, high endemism).

CONSTRAINTS AND NEEDS

The difficulties in developing threatened (protected) species lists in Indonesia are:

- The country is fragmented and dispersed - an archipelago of more than 17,000 islands;
- Accessibility between islands, especially small islands, is slow and irregular;
- Human resources limitations (expertise, skills, education levels and opportunities for training and employment);

- Limited information (population, ecology);
- Limited funding for doing research, surveys and monitoring.

Important requirements for strengthening and developing threatened species listing in the future include:

- Developing national criteria for threatened species;
- Monitoring and evaluating the status of protected species;
- Training programs on species assessment and analysis, and research methodology;
- Increasing human resources capacity;
- Enforcement of legislation and regulations that are relevant to biodiversity conservation.

Table 1
Species diversity and endemism.

Country	Birds		Mammals		Reptiles		Centers of Plant Diversity and Endemism	Endemic Butterflies
	Total	Endemic	Total	Endemic	Total	Endemic		
Indonesia	1531	397	515	201	511	150	36	700
Brazil	1622	>191	524	131	468	172	14	200
Colombia	1815	>142	456	28	520	97	10	300
Philippines	556	201	201	116	193	131	12	352
Australia	751	150	282	210	755	616	14	174

Source: Mittermeier *et al.*, 1997.

REFERENCES

Bappenas. 1993. *Biodiversity Action Plan for Indonesia*. Jakarta

Secretariat Cabinet of the Republic of Indonesia. 1999. *Government Regulations of the Republic of Indonesia Number 7 Year 1999 Concerning Preservation of Plant and Animal Species*. Jakarta.

Mittermeier, R. A., Gil, P. R. and Mittermeier, C. G. 1997. *Megadiversity. Earth's Biologically Wealthiest Nations*. Cemex. Canada.

Sujatnika, Jepson, P., Soehartono, T. R., Crosby, M. J. and Mardiasuti, A. 1995. *Melestarikan Keanekaragaman Hayati Indonesia: Pendekatan Daerah Burung Endemik [Conserving Indonesian Biodiversity: The Endemic Bird Area Approach]*. PHPA/BirdLife International-Indonesia Programme. Jakarta.