

# **LIVING FORESTS**

## **Forest Conservation Actions in Asia/Pacific**

*Let's leave our children a living planet*

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### Cover photo credits

Box, from top to bottom:

Tropical rainforest, Taman Negara, Malaysia. *WWF/Paul S. Sochacewski*

Tribal women carrying water, Gujarat, India. *WWF/Mauri Rautkari*

Sumatran tiger. *WWF/Michel Gunther*

Diversity of ocean life, French Polynesia. *WWF/Denis-Huot/BIOS*

Background:

Palmtree patterns, Malaysia. *WWF/Mattias Klum*

## INTRODUCTION

*"The forest is a peculiar organism of unlimited kindness and benevolence that makes no demands for its sustenance and extends generously the products of its live activity; it offers protection to all beings offering shade even to those who destroy it," Buddha.*

Forests are home to many important and spectacular wildlife, and in some areas, to people. They are our source of food, medicine, building materials for our homes, and resources for trade. We often use the genetic materials that the forests hold to improve commercial strains. Forests also provide us with a range of benefits which are often difficult to quantify in financial terms. Besides protecting soil and watersheds, forests also absorb carbon dioxide, the main greenhouse gas which contributes to global warming. Other intangible values of forests include recreational, aesthetic, historical, cultural, educational and spiritual values.

Roughly 16 per cent of the world's forests, or about 565 million ha of forests, are in Asia/Pacific. These forests harbour some of the world's rarest and unique animals and plants -- the tiger, giant panda, Asian elephant, orang utan, rhino, *Rafflesia* (the world's biggest flower) and the many variety of orchids. Like much of the forests elsewhere in the world, Asia/Pacific's forests are affected by widespread **deforestation** and an overall **loss of forest quality**. About 838,000 ha of the region's forests are lost annually to deforestation and degradation.

In the Himalayan-Hindukush-Karakorum mountain region from Afghanistan to Bangladesh, forests are being logged and degraded by excessive grazing, fodder and fuelwood collection, and pressure from the influx of refugees and political disturbance. In India and Nepal, the lowland *terai* forests are rapidly being logged and cleared, often illegally. China's forests have also been badly depleted and losses continue, especially within Tibet. In the Philippines, rainforests and mangroves are still being illegally logged despite already being reduced to fragments. Forests in Indonesia too, are rapidly being logged and cleared often to establish exotic plantations. In addition, the country's forests have been burnt, much of this occurring in Kalimantan with the worst occurring as recently as this year, 1997. Data collected by local scientists estimate that this year's fires have already burnt over 1.7 million hectares of forest area. For more information on the Indonesian fires, see page 12.

In Thailand, forests have already been fragmented, and a Thai Government logging ban has increased pressure on the forests of neighbouring countries such as Cambodia, Laos, Myanmar and Vietnam. In the South Pacific, the forests of Papua New Guinea, the Solomon Islands and Vanuatu are being logged, much of which illegally.

But the causes of forest destruction sometimes occur far away from the forest itself. Key causes include world consumption of forest products, servicing of international debt, and pressure from structural adjustment, trade and development, population growth and poverty. For instance, a substantial proportion of deforestation in northeast Thailand between 1970 and 1990 could be attributed to increased production of cassava, primarily for export to Europe as animal feed. At the same time, Thailand's fodder base was being reduced. Here, deforestation in northeast Thailand and European subsidised agriculture and livestock's production policies have a direct impact on the socio-ecological stability of northeast Thailand's people and the natural resource base on which they subsist.

WWF has a longstanding involvement in forest conservation dating back to the organization's founding in 1961. Much of this work in Asia/Pacific has focused on protected area management, from helping the authorities to develop and implement management plans, to working with local communities on alternative sustainable livelihood schemes. While continuing with this theme, WWF projects will also centre around high biodiversity areas, notably WWF Global 200 priority ecoregions. The WWF Global 200 is a list of areas selected for their importance for biodiversity conservation. It marks the first comprehensive effort to include outstanding examples of the broad range of the Earth's ecosystems.

WWF will also increasingly work on promoting trade and development policies favouring sustainable resource use such as sustainable forestry practices. Since the last two decades, Asia/Pacific has been experiencing remarkable economic growth and development. This is often at the expense of the environment, and pressure on natural resources including forests. The challenge here is to ensure that forests are conserved to serve nature as well as people both now and in the future. The recent scientific discoveries of three new large mammal species -- the saola, giant muntjac and Truong Son muntjac -- in Vietnam by WWF-sponsored field surveys amplify the need for conservation of these forests before they are lost forever and with them nature's secrets and our well-being.

This document outlines some of WWF's existing as well as proposed forest conservation efforts in Asia/Pacific, both at the regional and national levels. It is hoped that this document will provide WWF fundraisers and potential donors with an overview of the opportunities available for forest conservation in the region. For more information, please contact the Asia/Pacific Programme, WWF International, CH-1196 Gland, Switzerland, tel: +41-22 364 9111, fax: +41-22 364 6624, e-mail: skchng@wwnet.org.

## **REGIONAL WWF ACTIONS**

WWF's vast experience in forest conservation puts it in a good stead to promote and magnify this activity throughout the region. The organization will share its forest conservation experience with international agencies, government departments, non-governmental organizations, grassroots bodies, industries and corporations. Besides helping to put WWF's viewpoints across to the various sectors, this information sharing will result in a cross-fertilization of ideas and ensure a continuous learning process. In addition, WWF will also help build up local capacity in forest conservation, particularly in social/community forestry. Another important issue WWF will promote in the region is forest/timber certification. One regional information workshop was held in Bogor, Indonesia in October 1997, and more will be held if funds are available. All these efforts will help in meeting WWF's "Forest for Life!" campaign targets of having 10 per cent of the world's forest area under protection, and 10 million ha of production forests certified by the year 2000. *A budget of some CHF 700,000 is required annually.*

Many plant and animal species in forest habitats are subject to unsustainable levels of international trade. These species include rhinos (rhino horn is used in traditional Chinese medicine to treat death-threatening fevers), several species of primates (in demand by zoos and medical laboratories), parrots and other bird species (for collections), and rare forest orchids (also for collections). TRAFFIC, the wildlife trade monitoring arm of WWF and IUCN-The World Conservation Union, has offices throughout Asia and the Pacific. Their

efforts contribute to the conservation of these forest resources. TRAFFIC offices for Oceania, Southeast Asia, and East Asia *require a total annual budget of some CHF 1.5 million* to carry out their work.

WWF's Asia/Pacific strategic plan commits WWF to promote transboundary conservation including the establishment of transfrontier reserves. A transfrontier reserve is a protected area that cuts across the borders of two or more countries. In some instances, the area on one side of the border is already protected whilst the area on the other side is not. The selection of these transfrontier areas will be guided by the WWF Global 200 priority ecoregions. Possible sites include the following:

\* **Himalayan Transfrontier Reserve, South Asia**

The southern slopes of the Eastern Himalayas contain important temperate forests spread across Bhutan, China, India, Myanmar and Nepal. Listed as Global 200 site #79: Eastern Himalayan Temperate Forests, these forests, stretching from the lowlands to the foothills of the Himalayas in northern India and Bhutan, contain a huge and diverse collection of plants and animals. Species found here include the golden langur, Blyth's tragopan, lesser panda, takin, and Himalayan black bear. *Initial funding of some CHF 100,000 is required* to enable project planning.

\* **Borneo Transfrontier Reserves, Southeast Asia**

The rainforests of Borneo are uniquely rich in tree species, equalled only by parts of Amazonia. They harbour species such as the clouded leopard, proboscis monkey, orang utan, tarsier, and rhinoceros hornbill. Since the late 1960s, the forests have been heavily logged. In addition, in 1983, a huge area of over 8,000km<sup>2</sup> of forest was destroyed by fire and drought. There is urgent need to conserve the remaining forested areas, some of which are shared by Indonesia and Malaysia. These border areas are covered under two Global 200 sites, #33: Central Borneo Montane Forests and #34: North Borneo Lowland & Montane Forests. Site #33 includes the Lanjak Entimau Wildlife Sanctuary in the East Malaysian state of Sarawak, and the Bentuang Karimun Nature Reserve in Kalimantan, Indonesia. The two areas are being developed as a transfrontier reserve. Lanjak Entimau, which WWF helped establish, is already protected. The organization is currently helping the Indonesian government to develop Bentuang Karimun into a national park. This would ensure that other needs, such as socioeconomic development of local and regional communities, are accommodated in the conservation of the area. Global 200 site #34 includes the Kayan Mentarang Nature Reserve in Kalimantan, and the Ulu Padas Forest Reserve in East Malaysia's Sabah. Substantial areas of lowland rainforest, extensive mangroves, peat and freshwater swamp forests, and the largest heath forests (kerangas) in southeast Asia are found here. Much needs to be done on both sides before a transfrontier reserve can be proposed. WWF is working with both governments to conserve these two areas. *An annual budget of some CHF 1 million is required each* for Bentuang Karimun and Kayan Mentarang.

\* **Annamite Transfrontier Reserve, Southeast Asia**

The Annamite Range in Laos and Vietnam has some of the last remaining intact moist forests in Indochina. Listed as Global 200 site #26: Annamite Range Moist Forests,

these forests harbour some very rare species including three large mammal species discovered in recent years -- the saola, giant muntjac and Truong Son muntjac. Tigers are also found here. WWF currently has projects in the Vu Quang Nature Reserve and Bach Ma National Park, both in Vietnam. If funding is available, WWF would be able to carry out protected area work across the border in Laos. *Budget required is CHF 600,000.*

- \* **Indochina Emerald Triangle Transfrontier Reserve, Southeast Asia**  
The forests bordering Cambodia, Laos and Vietnam have the second highest level of mammal richness in Asia. They also rank high in mammal, bird and plant endemism. Recent surveys have confirmed the existence of an important tiger population. WWF has initiated some work on protected area planning and community conservation at Vietnam's Mom Ray Nature Reserve. *An annual budget of some CHF 1.5 million will be required* to extend this work in Cambodia and Laos to help conserve these forests, which are part of Global 200 site #59: Eastern Indochina Dry & Monsoon Forests.
  
- \* **New Guinea Mangrove Transfrontier Reserve, South Pacific**  
Papua New Guinea and Indonesia's Irian Jaya share one of the largest mangrove areas in the world. This mangrove belt has been identified as Global 200 site #188: New Guinea Mangroves. Many unique species occur here including the black palm cockatoo, cassowary and saltwater crocodile. The mangroves in Irian Jaya, however, have recently come under threat of exploitation to provide wood chips. WWF has carried out initial work to help establish a transfrontier reserve here comprising Indonesia's Wasur National Park and Papua New Guinea's Tonda Wildlife Management Area. When established, the transfrontier reserve will be the island of New Guinea's first cross-border conservation area covering one million ha of wetland, savanna and marine habitats. *An annual budget of CHF 1 million is required* to enable protected area work on both sides of the border.

In addition to transborder conservation, WWF can also link forest conservation to the proposed "*Living River Campaigns*", a new initiative under the organization's freshwater conservation programme, which includes watershed management. Three candidate sites in Asia have been proposed. These sites are described as follows:

- \* **Indus Living River Campaign, South Asia**  
The Indus river is listed as Global 200 site #187: Indus River Delta & Rann of Kutch. The delta is important for mangrove conservation, and the health of the river system depends on the maintenance of forested catchment areas on the slopes of the Hindukush-Karakorum mountain range. Harboring many endemic plant species, these catchment areas are subjected to intensive deforestation. These areas are also part of another Global 200 site, #76: Western Himalayan Temperate Forests.
  
- \* **Mekong Living River Campaign, Southeast Asia**  
The Mekong river basin is included in two Global 200 sites, #158: Mekong & Salween River Basins and #184: Mekong River Delta Mangroves. The Mekong river has the most diverse and distinctive large river fauna of tropical Asia. Some unusual species found here include the giant Mekong catfish and the eastern Saurus crane. Sadly, the

river is threatened by a variety of development initiatives including dam projects. Besides addressing these threats, action is also needed to conserve the watershed areas which extend into many countries including Cambodia, China, Laos, Myanmar, Thailand and Vietnam. Additional support is also needed to conserve and restore the mangroves of the Mekong Delta. Large tracts of these mangroves were nearly destroyed during the Vietnam War by napalm and defoliants like Agent Orange, and more recently by farmers migrating to the area. Conservation and restoration efforts by the Government of Vietnam have already led to successful reestablishment of thousands of hectares of mangrove forests, which now supply fuelwood, fish, and prawns. Many birds have also returned.

\* **Irrawaddy Living River Campaign, Southeast Asia**

The forests which form the catchment area and at the upper reaches of Myanmar's Irrawaddy River fall under two Global 200 sites, #38: Northern Indochina Subtropical Moist Forests and #40: Northeastern India & Myanmar Hill Forests. The forests of northern Indochina are regarded as Asia's richest remaining subtropical forests. They rank second highest for mammal diversity on the continent, and are also high in mammal, bird and plant endemism. The northeastern India and Myanmar hill forests have one of Asia's richest mammal fauna as well as the largest number of endemic bird species and overall bird diversity. Before WWF can initiate a living river campaign in Myanmar, it has to conduct a feasibility study in view of the country's current complex political situation.

## **NATIONAL WWF ACTIONS**

Under WWF's Asia/Pacific Strategic Plan, each country programme will set up an "ecological network of well-managed protected areas covering at least 10% of existing forest areas". They will also ensure environmentally appropriate, socially beneficial and economically viable forest management outside protected areas. These actions will be based on the concept of an integrated conservation and development programme (ICDP) implying a strong commitment to community/social forestry activities. Additionally, as many of the causes of forest destruction originate far away from the forest itself, WWF will also address these root causes. The organization will promote policies that minimize pollution and wasteful consumption, address macro-economic forces such as international debt and structural adjustment, population growth, poverty, and land tenure systems. This work will be integrated in WWF's area-based projects wherever possible. WWF will focus its resources on one or two Global 200 sites in each country and develop these into truly multi-disciplinary ICDPs.

### **Bhutan**

WWF has made significant contributions to forest conservation in Bhutan. It has helped the government revise Bhutan's Forest and Conservation Act, which now provides for long-term nature conservation, including provisions for protected area management. WWF has provided support to the Royal Manas National Park, Jigme Dorji Wildlife Sanctuary, and the Black Mountains National Park. WWF will continue to focus on Manas, and a new area, the Phipsoo Wildlife Sanctuary. These areas are part of Global 200 site #79: Eastern Himalayan Temperate Forests, which covers forested areas in Bhutan, China, India, Nepal and Myanmar. Stretching from the lowlands to the foothills of the Himalayas in northern India and Bhutan, these forests contain a huge and diverse collection of plants and animals.

Species found here include the golden langur, Blyth's tragopan, lesser panda, takin, and Himalayan black bear. Tigers also occur in Manas. Steps are currently taken to develop a collaboration between the park and the adjacent Manas Tiger Reserve in India. Further development of Phipsoo and Manas requires *an annual budget of some CHF 250,000*. It is likely that the Dutch Government will provide funding.

## **China**

WWF's involvement in forest conservation in China started with its Giant Panda conservation programme in the 1980s. Several panda reserves are located in the Global 200 site #78: Sichuan/Yunnan Temperate Forests. These forests are ranked among the world's top five richest temperate forests in terms of species diversity and endemism.

Rhododendrons are particularly diverse here. These forests are, however, threatened by expanding agriculture, demand for timber, and unsustainable lifestyles. The Giant Panda programme has received a large amount of funds from WWF Netherlands. But funding for FY1999 and beyond is needed for initiating ICDP activities in and around selected panda reserves, particularly in Pingwu County in northern Sichuan. *Annual budget required is some CHF 1 million per site.*

WWF has also worked extensively on forest conservation in Yunnan Province's Xishuangbanna Nature Reserve with support from the European Union (EU), Britain and Norway's aid agencies. Included in Global 200 site #38: Northern Indochina Subtropical Moist Forests, Xishuangbanna ranks second highest in mammal diversity in Asia. It also has some of the highest levels of mammal, bird and plant endemism on the continent. WWF was successful in raising awareness and understanding of the need for integrating protected area work with development activities for local communities here. This approach has subsequently been adopted on a large scale with international support from the EU and the Dutch and German governments to the Yunnan provincial government. WWF is currently focusing attention on other ecologically and economically valuable forest areas in western Yunnan, particularly Deqin County and Baimaxueshan Nature Reserve. *An annual budget of some CHF 1 million is required* for forest conservation work, including initiating an ICDP, in western Yunnan.

Timber consumption in China has impacts on the country's forests, and increasingly those overseas. It is predicted that China will become a major importer of tropical timber trade over the next 10-20 years. The trade in timber and other forest products is a little understood sector with massive implications for biodiversity conservation and sustainable utilization. WWF will explore the mechanisms and scale of this trade. It will look into introducing forest certification and other market-based conservation initiatives with China's Ministry of Forestry and other relevant authorities. *Budget required is CHF 250,000.*

## **India**

WWF India's forestry programme recognizes that in India, conservation of forest biodiversity and survival strategies of people, especially the country's poorest 300 million, are inseparably linked. This has led the organization to adopt "participatory forest management" as a major component in its forestry programme. The programme tracks

forestry related issues and developments, and provides research support to policy debate aimed at establishing positive policies and at opposing negative developments. By networking with other NGOs and interested individuals, WWF has successfully campaigned against the Government of India for leasing forest lands to industry.

Several WWF's forest projects in India are at areas in Global 200 sites. One, the Western Ghats represent an important Global 200 site, #27: Western Ghats Moist Forests. Fringing the coast of the Arabian Sea, the area contains one of India's last remaining tropical rainforests. It supports an enormous number of tree species, including 13 species of dipterocarp and the huge, commercially and ecologically valuable hardwood trees. Though it occupies only 5 per cent of India's land area, the Western Ghats contain over 4,000 species of higher plants, or more than a quarter of the country's total higher plant species. Wildlife species found here include an endangered goat-antelope, the Nilgiri tahr, and the lion-tailed macaque, one of the few mammal species endemic to the southern Indian rainforests. Despite its biodiversity importance, the area is under threat, mainly from logging, agriculture and urban expansion. WWF has initiated conservation activities in the Western Ghats under its "Biodiversity Hotspots" project funded by the MacArthur Foundation. If funds are forthcoming, WWF could consider initiating an ICDP in the area. *Annual budget required is CHF 500,000.*

Another area which receives support under the Biodiversity Hotspots project is the Andaman Islands in the Bay of Bengal. Rich in tropical evergreen, semi-evergreen and moist monsoon forests, the islands have been listed as Global 200 site #41: Andaman Islands Forests. Since 1960, the islands' human population has quadrupled, and forestry activities have disturbed much of the natural vegetation. The interior, however, remains relatively undisturbed. WWF could undertake an ICDP here if funding is forthcoming. *Annual budget required is CHF 500,000.*

The Northeast Indian States, notably Assam and Meghalaya, represent another biodiversity "hotspot" area which is included in Global 200 site #79: Eastern Himalayan Temperate Forests. The area, which includes Manas Tiger Reserve, has one of Asia's richest mammal fauna with tigers, elephants and Great Indian rhinos. It also has the highest number of endemic bird species and overall bird diversity in Asia. WWF is already working in Manas and further support is expected under the organization's Global Tiger Action Plan. There is a possibility to obtain funding from the Netherlands aid agency for long term protection of the area, including initiating an ICDP. There are also opportunities to establish a transfrontier reserve with the adjacent Royal Manas National Park in Bhutan (see "National WWF Actions: Bhutan"). *An annual budget of CHF 800,000 is required for Manas Tiger Reserve.*

The Eastern Ghats are also part of a Global 200 site, #61: Eastern Indian Monsoon Forests. Unlike the Western Ghats, the Eastern Ghats is not a mountain range but rather the broken and weathered relics of the peninsular plateau, marked by a series of isolated hills. During the last Ice Age, the area served as a refuge for wildlife, many of which have today evolved into rare and endemic species. The area also contains several important tiger reserves, and holds some of India's last wild Asian elephant populations. Support for

conservation in this area may be forthcoming under WWF's Global Tiger Action Plan.

### **Indochina**

WWF's Indochina Programme currently oversees conservation activities in Cambodia, Laos, Myanmar, Thailand and Vietnam. The extent of each country programme varies from country to country. Brief descriptions of forest conservation priorities in each of these countries follow.

### **Cambodia**

WWF has had little involvement in Cambodia until 1995 when it appointed a technical adviser based in Phnom Penh to assist the Ministry of Environment in biodiversity conservation. There are several Global 200 sites which may present conservation opportunities. One is site #158: Mekong & Salween River Basins which covers Virachay National Park and other potential protected areas in Rattanakiri Province. Together, these forested areas constitute a significant part of the Mekong watershed and are important for biodiversity conservation; wildlife found here include the tiger, elephant and wild cattle. Virachay also borders the forests of Laos and Vietnam, which together are part of Global 200 site #59: Eastern Indochina Dry & Monsoon Forests. Seen as the most diverse monsoon and dry forest area in Asia, these forests support varied and abundant wildlife including a number of threatened species. WWF has initiated some work on protected area planning and community conservation at Vietnam's Mom Ray Nature Reserve. *An annual budget of some CHF 1.5 million is required to initiate further work in Cambodia and adjacent Laos.*

### **Laos**

As mentioned under "Regional WWF Actions", there is a Global 200 site, #26: Annamite Range Moist Forests, covering Laos, Thailand and Vietnam which could qualify as a transfrontier reserve. This border area has relatively intact moist forests and harbours some very rare species including the saola, giant muntjac and the Truong Son muntjac, a new species discovered only in April 1997. Tigers also occur here. *A budget of CHF 600,000 is required to implement protected area work in Laos.*

Another area, Xe Pian, could also become part of a transfrontier reserve with Cambodia and Vietnam. These forests are part of Global 200 site #59: Eastern Indochina Dry & Monsoon Forests. See Cambodia section for more information. *An annual budget of CHF 1.5 million is required to initiate protected area work in Laos and Cambodia.*

Most of the hilly border areas between Cambodia, Laos and Vietnam are also part of the Mekong watershed. They are part of Global 200 site #158: Mekong & Salween River Basins. Conservation of these areas could come under the proposed Mekong Living River Campaign (see "Regional WWF Actions").

### **Myanmar**

WWF has had no involvement in Myanmar apart from supporting training of local conservationists. If WWF decides to expand its support to include field activities, it may consider initiating an Irrawaddy Living River Campaign as mentioned in "Regional WWF Actions". Also worth investigating are areas included in Global 200 site #29:

Kayah-Karen/Tenasserim Moist Forests; #38: North Indochina Subtropical Moist Forests; #40: Northeastern India & Myanmar Hill Forests; and #79: Eastern Himalayan Temperate Forests. Before WWF can initiate any conservation work in Myanmar, it has to conduct a feasibility study in view of the complex political situation.

### **Thailand**

In Thailand, WWF is supporting several important forest projects including the Huai Kha Khaeng/Thung Yai and Western Isan forest complexes. Bordering Myanmar and covering some 6,000km<sup>2</sup>, the Huai Kha Khaeng/Thung Yai wildlife sanctuaries represent the largest protected area in mainland southeast Asia. A World Heritage Site, these two sanctuaries hold a distinct fauna characteristic of the Malay archipelago, central Indochina, and the mountains of China and India; they contain one of Asia's richest mammalian fauna, and a rich diversity of bird species and amphibians. More than 400 species of birds and over 80 species of larger mammals have been recorded here. These species include the tiger, Asian elephant, Alexandrine parakeet, slow loris, and great hornbill. The sanctuaries also serve as important water catchments for several major reservoirs and hydropower and irrigation projects. Although both are gazetted wildlife sanctuaries, they are threatened by human encroachment, poaching and forest fires. WWF uses a multifaceted approach in its conservation of the two sanctuaries. Activities include development of an effective bufferzone management plan, and promotion of conservation awareness. *Annual budget required is CHF 800,000.* The Netherlands and Denmark's aid agencies may provide funding.

At Western Isan, which is part of two Global 200 sites, #158: Mekong & Salween River Basins and #38: North Indochina Subtropical Moist Forests, WWF is initiating integrated conservation and community development activities as well as reforestation efforts. Rich in biodiversity, Western Isan's forests harbour rare species including the Sumatran rhino -- it is the last stronghold of the Sumatran rhino in Thailand -- and an estimated 420 elephants or 25 per cent of Thailand's wild elephant population. Western Isan is also an important centre of orchid diversity, with over 200 species recorded so far, and many of them are endemic. Besides supplying the villagers with fuelwood, animal protein and medicinal herbs, the forests are also the only watershed for rivers supplying water to 10 million people in 10 provinces of central Isan. These rivers include one of the Mekong's major tributaries. WWF's work here could be part of the proposed Mekong Living River Campaign mentioned in "Regional WWF Actions". *Annual budget required is some CHF 800,000.*

### **Vietnam**

WWF's portfolio of forest projects in Vietnam includes conservation of the Vu Quang Nature Reserve and Cat Tien National Park. Part of Global 200 site #26: Annamite Range Moist Forests, world-renowned Vu Quang harbours some very rare species including the tiger, and the newly discovered saola and giant muntjac. The Netherlands Government is providing funds to WWF to implement an ICDP in Vu Quang.

The Netherlands Government is also providing funds for a similar WWF project at Cat Tien. Part of Global 200 site #59: Eastern Indochina Dry & Monsoon Forests, Cat Tien's

monsoon forests support a varied and abundant wildlife, a number of which are threatened. The most prominent species is the Javan rhino; Cat Tien is the only place in the world besides Indonesia's Ujung Kulon which harbours this species. Logging, clearing for agriculture, and intensive hunting of wildlife are some of the threats facing Cat Tien.

Another reserve which is a high priority for WWF in Vietnam is the Mom Ray Nature Reserve. Also part of Global 200 site #59, Mom Ray is in the so-called Indochina Emerald Triangle, a significantly large proposed transfrontier conservation area bordering Vietnam, Laos and Cambodia. Mom Ray alone has a total of 80 mammal species including tigers, elephants and gibbons, and 200 bird species. WWF has initiated some work on protected area planning and community conservation. The organization hopes to receive substantial funding from development aid sources to engage in a long-term ICDP in the area, which is also an important watershed for some of the Mekong's major tributaries. The work could be part of the proposed Mekong Living River Campaign (see "Regional WWF Actions"). *Annual budget required is some CHF 1 million.*

### **Indonesia**

WWF has been involved in forest conservation in Indonesia since 1962, shortly after the organization was established. Major protected areas which received WWF support include Gunung Leuser, Kerinci-Seblat, Seberida and Way Kambas in Sumatra; Tanjung Puting, Kutai, Kayan Mentarang and Bentuang Karimun in Kalimantan; Ujung Kulon and Meru Betiri in Java; Lore Lindu, Dumoga and Tangkoko Batu Angus in Sulawesi; and Arfak, Cyclops, Wasur and Lorentz in Irian Jaya. Almost all these areas fall within the 12 Global 200 forest sites covering Indonesia.

The Gunung Leuser National Park and the Mentawai Islands are part of Global 200 site #31: Sumatran-Nicobar Islands Lowland Forests. This area has highly diverse forests including extensive limestone forests, and is high in species endemism. It is also important for the conservation of several species of special concern including the Sumatran tiger, Sumatran rhino, Asian elephant, and orang utan. Some 65 to 80 per cent of these forests have already been lost to agriculture and logging. For instance, vast stands of ironwood, a species highly valued for its exceptional durable timber, which are found on the flat lowlands of southern Sumatra, have almost entirely been destroyed. The Mentawai Islands, just west of Sumatra, have similarly but more intact forests. These too are threatened by agriculture. With the EU already funding conservation efforts at Gunung Leuser, WWF could consider working in another protected area in this ecoregion, possibly Siberut, where there are at least four endemic primate species including the Kloss's gibbon. *Annual budget for an ICDP is some CHF 1 million.*

The Kerinci-Seblat National Park in Sumatra's Bukit Barisan range is included in Global 200 site #32: Sumatran Montane Forests. High in species richness and endemism, the area is being threatened by deforestation and agricultural developments such as conversion to rubber and oil palm plantations and spread of cinnamon cultivation, as well as transmigration projects. Tigers, Sumatran rhinos, and Sumatran elephants are found here. The World Bank is currently supporting WWF's work in Kerinci-Seblat. Long term support is, however, needed. *Annual budget required is some CHF 1 million.*

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**Indonesian Fires** *(To be boxed and placed next to Indonesian text)*

For the last five months of 1997, fires have swept throughout the Indonesian archipelago, especially in southern Sumatra, west and central Kalimantan, and parts of Irian Jaya. While fires have occurred in the past, the scale and frequency in which they occur since the 1980s indicate that the problem is aggravating. Data collected by local scientists estimate that this year's fires have burnt over 1.7 million ha of forest area. The fires have resulted in a choking haze that blanketed much of southeast Asia, causing health problems to millions of people living in the region. Thousands are suffering from respiratory infections, and deaths have also occurred. Billions of dollars were lost as schools, factories, airports and shipping lanes closed, and road traffic disrupted. Tourist arrivals also fell, and with reduced sunlight, crops are affected. Wildlife has also been affected, trapped in the inferno or doomed as a result of further habitat loss. Species at risk include the orang utan, Javan and Sumatran rhinos, Sumatran tiger, Asian elephant, and sun bear. Other less apparent, but equally grave, consequences of the fires are destruction of fisheries and corals, and perhaps even climate change.

Eighty per cent of the fires are said by Indonesia's Minister for the Environment, to have been caused by companies burning previously forested areas as a cheap method of land-clearing, for oil palm, timber and industrial pulpwood plantations. The El Nino phenomenon, responsible for bringing an extended dry season and drought to Indonesia, exacerbated the problem causing the fires to spread and rage out of control. Throughout the crisis, WWF has maintained an active presence, providing the Indonesian government with support, including geographical information systems (GIS) equipment and personnel to monitor the fires. Both WWF Indonesia and Malaysia have been straining under limited resources to keep the public informed of the extent of the fires and their impact.

While the immediate crisis may be over, much still needs to be done. WWF has developed a package of projects aimed at providing emergency relief to both people and wildlife, researching into the causes and impacts of the forest fires, including economic impact, communicating to the public and policy makers, and devising long term strategies for forest fire prevention, ecological restoration and monitoring, and lobbying for policy reform. WWF believes that fundamental changes in policies, practices, and public attitudes are necessary to prevent a recurrence of the problem. The organization had, in a statement in October, urged the governments of ASEAN (Association of South East Asian Nations) to implement a Regional Fire Prevention and Control Strategy. Funds are required to implement these projects.

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The Kayan Mentarang and Bentuang Karimun nature reserves in Kalimantan are part of Global 200 site #34: North Borneo Lowland & Montane Forests and #33: Central Borneo Montane Forests respectively. Kayan Mentarang contains the largest unbroken stretch of protected rainforest in Borneo, and is an important refuge for numerous species, particularly rare and endemic ones. Bentuang Karimun, which together with the Malaysian state of Sarawak's Lanjak Entimau Wildlife Sanctuary will form one of the world's biggest

transfrontier protected areas, consists of several types of ecosystems. These include lowland dipterocarp forest, wet hill forest, montane forest, swamp forests, and moss forest with patches of limestone outcroppings. Wildlife species found here include the clouded leopard, proboscis monkey, orang utan, tarsier, and several species of hornbill. WWF is currently receiving funding from the Danish Government and the International Timber Trade Organization (ITTO) for conservation of Kayan Mentarang and Bentuang Karimun respectively. However, long-term funding of *annual budget of CHF 1 million is required* for each site. *If an additional amount of CHF 1 million is available annually*, WWF can implement another ICDP in a third site further to the south of these two reserves thereby helping to protect the full range of this area's unique biodiversity.

WWF Netherlands is currently providing funding support for conservation work in Irian Jaya, in particular the proposed Lorentz National Park, Arfak Mountains Nature Reserve, and Wasur National Park. These protected areas are included in several Global 200 sites, including #48: New Guinea Montane Forests, #49: New Guinea Lowland Forests and #188: New Guinea Mangroves. These areas hold many unique species, including numerous birds, marsupial mammals, insects, and flowering plants. The bird fauna is one of the richest and most varied in the world, with species such as the King bird of paradise, and Wilson's bird of paradise. The forests also support about 200 species of mammals, including the Doria's and Goodfellow's tree kangaroo, Papuan forest wallaby, and black capped lory. There are over 1,200 species of trees, and about 2,000 ferns. The world's largest butterfly, the Queen Alexandra's birdwing, is also found here.

Lorentz has a range of habitat types including Indonesia's highest mountain peak, Mt Lorentz. WWF has been involved in surveys and community conservation activities in Lorentz for several years but this project has received a setback in 1996 when a scientific team including WWF project personnel were taken hostage. *An annual budget of some CHF 500,000 will be needed* to sustain this project in the coming years.

The Arfak project in Irian Jaya's "bird's head" has also been supported by WWF for several years. The project is well known for its successful community-based butterfly farming initiatives. WWF US's Biodiversity Support Program is currently helping with the development of community-based marketing enterprises in this nature reserve. *An annual budget of CHF 200,000 is required.*

The Wasur project in the south of Irian Jaya is important for conservation of both lowland forests and mangroves. It is part of Global 200 site #188: New Guinea Mangroves, which is the largest mangrove area in the world. The area contains many unusual species such as the black palm cockatoo, cassowary, and saltwater crocodile. The mangroves have recently come under threat of exploitation, and possible destruction, to provide wood chips. Wasur has been proposed as a potential transfrontier reserve with the neighbouring Papua New Guinea's Tonda Wildlife management area. *An annual budget of CHF 1 million is needed* to enable further protected area work in Wasur and Tonda.

Two Global 200 sites where WWF currently does not have projects but could consider starting, are site #36: Sulawesi Moist Forests and #37: Moluccas Moist Forests. The

Sulawesi site has the highest levels of mammal, bird and plant endemism in Asia. While many of Indonesia's larger islands suffer from deforestation, Sulawesi still supports extensive tracts of both montane and lowland moist forests. The island's steep slopes and lack of commercially valuable tree species help ensure its extensive forest cover of over 60 per cent. Species found here include the unusual Sulawesi wild pig or *babirusa*, black-crested macaque, Sulawesi hornbill, and Sulawesi tree nymph butterfly. The Moluccas site is also important for biodiversity conservation. Part of a biogeographical zone called Wallacea, the Moluccas archipelago contains a curious mixture of Asian and Australian fauna including macaques, tarsiers, squirrels, and cuscuses. Located between the islands of Sulawesi and New Guinea, the archipelago ranks highest in the world for bird endemism. Many interesting species of cockatoos and parrots are found here. Eighty per cent of Moluccas are under forest cover; the islands, ranging in size from 18,000Km<sup>2</sup> to only a few hectares, and some of which are uninhabited, have a total of about 56,000Km<sup>2</sup> of lowland and montane rainforests. In view of the biodiversity importance of Sulawesi and the Moluccas, WWF could consider engaging a new ICDP initiative in either of the two ecoregions or both. *A budget of CHF 100,000 is needed for a feasibility study and project identification mission, and implementation of an ICDP would require an annual budget of CHF 1 million per site.*

## **Malaysia**

WWF Malaysia has a long history of forest conservation with numerous forest-related projects. Amongst the protected areas the organization has supported in their establishment and management are Endau Rompin National Park and Taman Negara in Peninsular Malaysia; Bako National Park, Samunsam Wildlife Sanctuary and Lanjak Entimau Wildlife Sanctuary in Sarawak; and Danum Valley and Tabin Wildlife Reserve in Sabah. Additionally, WWF has provided indirect support by providing input in the development of conservation strategies for numerous states. Today, WWF is providing research and technical support to establish the Nakawan National Park in Peninsular Malaysia, as well as identify potential protected areas in the highland forests of the Peninsula and moist forests of Sabah.

The Nakawan Range in Perlis, the most northern state in Peninsular Malaysia, is the longest known continuous limestone range in Malaysia. The range supports a diversity of habitats including lowland forest, white-Meranti *Gerutu* seasonal forest, secondary *Schima*-bamboo forest, and limestone forest. The white-Meranti *Gerutu* is the natural vegetation of the Range and is not found outside Malaysia, extreme southern Thailand and Indonesia. The *Schima*-bamboo forest is the predominant secondary forest vegetation, and is unique to Peninsular Malaysia. In addition, the limestone flora of the Range includes many endemic species, of which five to eight are endemic to Perlis. Much of the forests has been disturbed by logging, agriculture and burning. *An annual budget of CHF 700,000 is required to implement an integrated management plan for the proposed park. This will enhance the establishment of a transfrontier reserve with Thailand's Thaleban National Park.*

Also in Peninsular Malaysia, WWF is engaged in a project which aims to promote the sustainable use of the montane forests of the main range. WWF works to raise awareness of

conservation and development issues as well as strengthening protection of the highland reserves. Part of Global 200 site #30: Peninsular Malaysian Lowland & Montane Forests, these forests have a rich flora and fauna. With about 200 species of mammals, including the Indochina tiger, Asian elephant, and 81 bat species, the forests have one of the richest diversity of mammalian fauna in Asia. They are also home to 110 species of snakes, thousands of insect species, and a rich diversity of birds. There are also about 8,000 species of plants. *An annual budget of CHF 700,000 is required.*

In Sabah, WWF works to ensure the long term conservation of the Kinabatangan area. This area is included in two Global 200 sites, #34: North Borneo Lowland & Montane Forests and #148: Sundaland Rivers & Swamps. Kinabatangan represents one of the largest remaining forested river floodplains in Malaysia. It has great biological importance, containing breeding populations of many increasingly endangered species of birds, mammals and reptiles. Its populations of proboscis monkeys, orang utans and Asian elephants, as well as rhinoceros hornbills and kingfishers, are a tourist draw. Major threats to the area include habitat conversion for oil palm plantations, and inappropriate tourism practices. WWF's Kinabatangan project seeks to introduce sustainable community development schemes, environmentally sound tourism management strategies, and forest rehabilitation. It has already been proposed as a "model wetland project" to be funded by WWF Netherlands. *Annual budget required is about CHF 1 million.*

## **Nepal**

WWF has supported several forest related projects in Nepal including Annapurna Conservation Area, Royal Bardia National Park, Royal Chitwan National Park, and Sagarmatha National Park. These protected areas are all part of Global 200 sites, and much of WWF's efforts includes agroforestry and reforestation. Both have been successful. For instance, WWF has achieved 95 per cent success with its agroforestry programme in Sagarmatha.

While WWF has stopped its support to Annapurna, after having established a successful model sustainable ICDP, the organization will continue supporting Bardia, Chitwan and Sagarmatha. At Royal Bardia National Park, WWF has recently started implementation of a major ICDP with *an annual budget of CHF 400,000* provided by the Dutch Government. The park contains rare animals including the greater one-horned rhino, tiger, Asian elephant, clouded leopard, Gangetic dolphin, black buck, gharial, and sloth bear. The park is an important freshwater site, unique for its alluvial grassland communities. Part of Global 200 site #105: Terai-Duar Savannas & Grasslands, the park is threatened by modern development encroaching on its periphery.

WWF has also recently developed a project in Kanchenjunga, an important watershed for the tributaries of the Ganges river. Part of Global 200 site #95: Eastern Himalayan Alpine Meadows, Kanchenjunga was declared a *Gift to the Earth* in April 1997. (*Gifts to the Earth* is an exciting new initiative under WWF's Living Planet Campaign allowing everyone, from individuals to governments, to help achieve conservation goals.) The area encompasses the rich forest of the endangered Himalayan larch mixed with *Abies* species. It also has a high density of glaciers including one of the longest in the world, the

Kanchenjunga glacier. The 8,586m-high Mt Kanchenjunga is the world's third highest. WWF hopes to implement a model ICDP in the Kanchenjunga Conservation Area with the International Centre for Integrated Mountain Development (ICIMOD) and the Netherlands' volunteer organization, SNV. *Annual required budget is CHF 500,000.* The Dutch Government is likely to fund this project.

### **Pakistan**

In Pakistan where forest cover is limited, WWF has supported relatively few forest related projects. These projects are at Kaghan Valley, Suleiman Mountains, and Palas Valley. These areas are included in Global 200 site #76: Western Himalayan Temperate Forests. This site, particularly the Palas Valley, contains numerous endemic plant species. In addition, the forests, particularly those in the Hindukush-Karakorum mountain range, are also important to maintaining the Indus river system. Much of these forests is threatened by logging, conversion to agriculture, and fuelwood collection. WWF is already engaged in community-based conservation activities in these areas and may expand into Azad Jammu and Kashmir. *An annual budget of CHF 500,000 is required* for implementation of a model ICDP at each additional site. Some of these conservation initiatives, particularly those in the Indus river watersheds, can be part of a "Living River Campaign" as mentioned under "Regional WWF Actions".

WWF is also involved in mangrove conservation in Pakistan, with a major project at Sindh and Baluchistan. This project includes mangrove restoration programmes involving local communities, and promotion of conservation awareness. *An annual budget of CHF 600,000* is being provided by the Dutch Government. If additional funds are forthcoming, WWF would like to initiate integrated conservation and development activities in the mangrove areas upstream of the Indus river. A Global 200 site (#187: Indus River Delta & Rann of Kutch), the Indus delta is important for mangrove conservation. *Annual budget required is CHF 500,000.* These activities can also be part of the Indus Living River Campaign.

### **Philippines**

The forests of the Philippines are listed as Global 200 site #35: Philippine Moist Forests. These forests support a rich and diverse flora and fauna. Of the roughly 12,000 species of plants and fungi found in these forests, about 3,500 are endemic. The forests are also high in species endemism, particularly mammal, bird, amphibian, and reptile. Most of these forests and their species are severely threatened by extensive habitat degradation and loss due to logging, agriculture, and soil erosion. One of the largest forest conservation projects in the Philippines is the National Integrated Protected Areas System or IPAS. Funded through a debt-for-nature swap arranged by WWF, IPAS identified 10 potential nature reserves, which became an important component of the Protected Areas and Wildlife Bureau established by the Philippine Government in 1987. Today, WWF's support for forest conservation in the Philippines includes Mt Guiting Guiting and El Nido.

Located in Sibuyan, Mt Guiting Guiting is one of the last remaining areas in the Philippines with extensive lowland and montane forests. The forests are, however, threatened by the destructive means by which the people meet their economic needs. Although the municipal government's efforts to control illegal logging have minimized this activity, the lack of

alternative sources of generating income could not eradicate the problem. WWF's three-year project here aims to introduce livelihood schemes, skills training, provision of technical assistance, and the establishment of a credit and savings facility. Started in 1997, the project has *an annual budget of CHF 600,000* which is provided by the Dutch Government.

The El Nido Marine Reserve in Palawan has a diverse range of habitats, including rainforests, limestone forests, mangroves, beach and coastal forests, sea-grass meadows, and coral reefs. These habitats contain a rich flora and fauna, many of them endemic to Palawan. For more than a decade, the reserve has been the site of marine habitat conservation. Recognizing the complex interactions between terrestrial and marine habitats, El Nido's forests were later included in the reserve. Logging and shifting cultivation had denuded the once-forested hillsides causing siltation of the marine ecosystems. El Nido is part of Global 200 site #34: North Borneo Lowland & Montane Forests, which has the third richest flora in Asia. WWF has recently secured funding of *CHF 400,000 annually* from the Dutch Government to implement an ICDP in El Nido.

### **South Pacific**

WWF's South Pacific Programme covers the 22 Pacific island nations, and its forest work included the "Melanesian Forest Conservation Review". Completed in December 1993, the review looked at the importance of forest resources and the outlook for their sustainable use or conservation. It covered the status of forest biodiversity in Fiji, the Solomons and Vanuatu; past, present and future forest threats; causes for forest loss; and various forest conservation approaches. The 105-paged review report has been circulated to government agencies and NGOs in the three island states and at relevant regional meetings. More recently, WWF completed a project in Vanuatu which sought to promote small-scale sustainable harvesting of the country's timber resources as an alternative to selling logging concessions to overseas companies. Much of WWF's forest conservation efforts in this subregion currently focuses on Papua New Guinea and the Solomons.

### **Papua New Guinea**

Papua New Guinea has an extraordinary diversity of ecosystems and some of the most remarkable wildlife on Earth. Both the montane and lowland forests have many unique species, which are similar but not identical to Indonesia's Irian Jaya. Like the forests of the Solomons, Papua New Guinea's forests are also threatened by non-sustainable commercial logging. These forests are included in at least four Global 200 sites -- #48: New Guinea Montane Forests, #49: New Guinea Lowland Forests, #50: New Guinea Outer Islands/Solomons Moist Forests, and #188: New Guinea Mangroves.

One of WWF's biggest projects in Papua New Guinea is conservation of the Kikori Basin. Aimed at conserving forestry resources through working with local communities, the project is also important for freshwater conservation. The Kikori forests are a vital watershed for an important river basin system. Despite this importance, the forests are threatened by unsustainable, huge scale commercial logging. *An annual budget of some CHF 1 million is required.*

Another forest project with a freshwater component is the Papua New Guinea Community Landcare project. The project provides WWF with the opportunity to engage in model ICDPs. It proposes community-based conservation activities at two sites initially. These sites cover a diverse range of natural habitats, including lowland and montane forests as well as wetlands such as the Sepik river, a number of lakes, and coastal areas. Conservation of these wetlands is also of relevance to forest conservation as their health is inextricably linked to that of the watersheds and surrounding forests. *An annual budget of CHF 1 million is required*, including CHF 800,000 for field activities and some CHF 200,000 to maintain a central coordinating core unit. The Dutch Government is likely to fund this project.

#### **The Solomons**

The Solomon Islands are part of Global 200 forest site #50: New Guinea Outer Islands/Solomons Moist Forests. This archipelago has highly endemic animal and plant life which are different from that found on the nearby island of New Guinea. Intensive commercial logging is destroying both the lowland and montane forest habitats. WWF has been involved in community-based resource conservation activities in the Solomons since 1991 with funding from the British Department for International Development (formerly called ODA). *Additional annual funding of some CHF 600,000 is required.*

#### **Fiji and Samoa**

The forests of Fiji and Samoa are included in Global 200 site #53: South Pacific Islands Forests. Both islands were once clothed in tropical moist forests. Although species richness is low compared to continental moist forests, long isolation has produced remarkable examples of species endemism, especially among plants, birds, lizards, frogs, and land snails. Fiji, in particular, has unusual evolutionary patterns, with iguanas originally from the Neotropics and other highly disjunct patterns. So far WWF is not involved in any significant forest related activities on either of these two islands. However, the organization has developed partnerships with local NGOs and institutions to conserve natural resources and plan sustainable activities. *An annual budget of some CHF 500,000 is required to sustain these efforts.*

#### **New Caledonia**

New Caledonia is an isolated remnant of the ancient super continent Gondwanaland. Due to its biogeographical history, unusual soil types and climate variations, the island has been gifted with an extraordinary biodiversity. Its forests have been listed as Global 200 site #45: New Caledonian Moist Forests. The island has very high species endemism, particularly arthropods, reptiles and birds. Giant geckos and horned tortoises formed part of the extraordinary and dominating reptile fauna, while interesting bird species include the wingless kagu. New Caledonia also has a diversity of vegetation, with over 3,000 species of vascular plants, of which nearly 80 per cent are endemic. Some of the plants have a rare ability to store toxic nickel from the serpentine soils, while others produce some of the world's most beautiful flowers. The island's natural treasures are, however, threatened by habitat clearance, fire, over exploitation of some species, competition from introduced species, mining, agriculture, and livestock grazing. WWF could consider setting up an ICDP programme here if funds are forthcoming. *Initial funding of CHF 100,000 would be required to implement a feasibility study and project development mission.*

## **Other Areas**

### **Bangladesh**

WWF had been involved in Bangladesh when it helped develop a management plan for the Sundarbans mangrove forests in 1978 under the organization's Operation Tiger Project. This involvement has since stopped. However, under the recently developed WWF Global Tiger Action Plan, some WWF action has been recommended for the Sundarbans in Bangladesh which has the highest priority for tiger conservation for the whole of Asia. Listed under the RAMSAR convention as a wetland of international importance, the area is also a Global 200 site, #185: Sundarbans Mangroves. According to RAMSAR reports, Sundarbans's forests are also relatively well managed. *A budget of CHF 50,000 is required* for WWF to conduct a feasibility study and project development mission so as to enable the organization to identify the role it can play to further improve conservation of this area, particularly its unique tiger population.



## PHOTOS:

### Introduction:

Pix NAP 1549: Kerinci-Seblat National Park, Sumatra, Indonesia. About 20-25 per cent of the Earth's flora and fauna, and the greatest number of Asia's fauna are in the rainforests of southeast Asia. *WWF/Mauri Rautkari*

Pix WCS 13646 or Pix WCS 13648: Deforestation, which is widespread in Asia/Pacific like elsewhere in the world, is the most important cause of habitat loss leading to loss of biodiversity. *WWF/Vin J Toledo*

### Regional WWF Actions:

Pix CIT 1389: Bird market, Thailand. Many wildlife species found in the forests of Asia and the Pacific are subject to unsustainable levels of international trade. *WWF/Michèle Dépraz*

Pix WCS 13831: Tourists in the Wasur National Park in Irian Jaya, Indonesia. WWF has carried out work to help establish a transfrontier reserve comprising Wasur and Papua New Guinea's Tonda Wildlife Management Area. *WWF/Ian Craven*

Pix 9337: Replanting mangroves destroyed by Agent Orange in Vietnam. The Government's restoration and conservation efforts have led to successful reestablishment of mangrove forests which now supply fuelwood, fish and prawns. *WWF/Elizabeth Kemf*

### National WWF Actions:

#### China

Pix PAN 336: Panda research, Tangjiahe, China. Several panda reserves are in Global 200 site #78: Sichuan/Yunnan Temperate Forests, one of the world's five richest temperate forests for species diversity and endemism. *WWF/George B Schaller*

#### India

Pix LAN 2020: Occupying only 5 per cent of India's land area, the Western Ghats contain over 4,000 species of higher plants, or more than a quarter of the country's total. *WWF/Mauri Rautkari*

#### Indochina

Pix MAM 8718.02: Saola, Vietnam. The recent discoveries of the saola, Giant muntjac and Truong Son muntjac in Indochina's forests, amplify the need for conservation of these natural habitats before they are lost forever and with them, nature's secrets and our well-being. *WWF/David Hulse*

#### Thailand

Pix MAM 1473.04: The forests of Western Isan are the Sumatran rhino's last stronghold in Thailand. *WWF/Alain Compost*

### Indonesia/Arfak

Pix INV 645: Goliath birdwing butterfly, Arfak Mountains, Indonesia. WWF introduced butterfly farming as part of the conservation of this important reserve in Irian Jaya.

*WWF/Duncan Neville*

### Indonesia box

Pix WCS 14996.07: A fire fighter battling with the blazing peat moss in Indonesia.

*WWF/Tantyo Bangun*

### Malaysia

Pix MAM 1359: The forests of Malaysia contain many rare species such as the Slow loris.

*WWF/N A MacKenzie*

### Nepal

Pix LAN 7346.04: WWF's highly successful agroforestry programme in Nepal's Sagarmatha National Park has ensured that the park's important flora species such as these giant rhododendrons, survive. *WWF/Pierre Neyret*

### Philippines

Pix WCS 13652: The El Nido Marine Reserve in the Philippines contains a diverse range of habitats including rainforests, mangroves, sea grass meadows, and coral reefs. *WWF/Vin J Toledo*

### Papua New Guinea

Pix AVE 1875: The double-wattled cassowary is one of the many unique bird species found in the forests of Papua New Guinea. *WWF/Alain Compost*

### Bangladesh

Pix LAN 1485: The mangrove forests of the Sundarbans are the single largest continuous area in the world for the threatened Bengal tiger. The forests also act as a barrier to the frequent storms arising in the Bay of Bengal, protecting communities inland. *WWF/Xavier Lecoultre*

## ADDITIONAL PICTURES

### Pg 4

Pix FLO 973: The *Rafflesia*, the world's biggest flower. This botanical wonder is found only in the forests of Southeast Asia. *WWF/Alain Compost*

### Pg 12

Pix of Dayak women (need to crop): Dayak women collecting medicinal plants in the Kalimantan forest, Indonesia. WWF's project in Kayan Mentarang, Kalimantan, seeks to promote the traditional and sustainable resource use patterns of the tribal peoples. *WWF/Alain Compost* (NB: If caption is too long, cut out 2nd sentence. Thanks.)

OR

Pix WCS 6115: Rattan, a forest product, is sustainably cultivated in the bufferzones of Sumatra's Kerinci Seblat National Park, Indonesia. *WWF/Mauri Rautkari*

Pg 15

Pix LAN 7346.04: WWF's highly successful agroforestry programme in Nepal's Sagarmatha National Park has ensured that the park's important flora species, such as these giant rhododendrons, survive. *WWF/Pierre Neyret*

Pg 18

Pix ARP 718.00 or ARP 114.00: The banded iguana, one of the more unusual wildlife found in Fiji. *WWF/John Gibbons*

## Selected WWF Forest Conservation Actions in Asia/Pacific

1. CHINA: Protecting the bamboo forests of Sichuan, the giant panda's habitat. Part of a Global 200 site, these forests are ranked among the world's top five richest temperate forests for species diversity and endemism.
2. JAPAN: Promoting timber certification among all sectors of Japan especially trade and industry. Japan is the world's largest importer of tropical hardwood.
3. MALAYSIA: Raising awareness of conservation and development issues to protect the montane forests of Peninsular Malaysia's Main Range, part of Global 200 site #30: Peninsular Malaysian Lowland & Montane Forests.
4. VIETNAM: Implementing an integrated conservation and development programme to protect the Vu Quang Nature Reserve, where scientists discovered two new large mammal species, one in 1992 and the other in 1994. The reserve is in Global 200 site #26: Annamite Range Moist Forests.
5. SOLOMONS: Helping customary resource owners in conserving their forests and using them for sustainable development. The forests of this archipelago are in Global 200 site #50: New Guinea Outer Islands/Solomons Moist Forests.
6. INDONESIA: Introducing community development schemes, such as butterfly farming, and promoting formal recognition of the traditional people's roles in conserving protected areas in Irian Jaya, a biological hotspot included in several Global 200 sites.
7. PAKISTAN: Conserving the mangrove forests of Sindh and Baluchistan through persuading villagers to adopt sustainable resource use and involving them in mangrove rehabilitation.
8. INDIA: Tracking forestry related issues and developments, and providing research support to policy debate aimed at establishing positive policies and opposing negative developments that affect India's forests, several of which are in Global 200 sites.
9. THAILAND: Developing an effective bufferzone management plan for the Huai Kha Khaeng/Thung Yai forest complex, a World Heritage Site. Home to tigers, Asian elephants, and more than 400 bird species, the forests are also important watersheds for several major reservoirs.
10. PHILIPPINES: Enabling the communities of Mt Guiting Guiting to adopt sustainable livelihood schemes by providing them with skills training and technical assistance. Part of a Global 200 site, Mt Guiting Guiting is one of the last remaining areas in the Philippines with extensive lowland and montane forests.

11. **BHUTAN:** Providing the Forestry Services Division with institutional support, including capacity building in park management, and developing procedures for monitoring the use of Bhutan's natural resources. Bhutan presently has 60 per cent forest cover.
12. **PAPUA NEW GUINEA:** Engaging local people in developing and implementing community-based conservation activities to protect some of the South Pacific's last remaining intact forests.
13. **AUSTRALIA:** Lobbying the state and local governments for, and raising public awareness of the importance of conserving Australia's vine forests, home to over 100 regionally threatened plant species.
14. **NEW ZEALAND:** Engaging forest stakeholders including timber companies in sustainable forest management issues, including certification.
15. **NEPAL:** Carrying out agroforestry and reforestation efforts in Sagarmatha National Park, home to Mt Everest, the world's tallest mountain. Sagarmatha is part of a Global 200 site. Photo captions: