

# LIVING WATER

## WWF Freshwater Conservation Actions in Asia/Pacific

### INTRODUCTION

*"Many of the wars in this century were about oil, but those  
of the next century will be over water,"*

Ismail Serageldin, World Bank, 1995.

In recent years, the availability of freshwater has increasingly become a central issue, which in several places has led to social unrest. By the year 2025, more than 3.2 billion people or one out of three persons, are expected to live in 52 "water stress" countries. Most of these "water stress" countries will be in Asia, but the problem will not be confined within national territories as local populations cross international boundaries in search of freshwater. According to the International Organization for Migration, 25 million people are estimated to be environmentally displaced worldwide.

The growing freshwater crisis provides WWF with the opportunity to link the deteriorating freshwater ecosystems with environmental degradation, species loss and extinction, and negative impacts on human health, living standards and livelihoods. Accordingly, WWF has identified freshwater ecosystems as one of three priority biomes for conservation.

WWF recognizes that freshwater resources need to be managed with ecological constraints and human needs in mind. Its freshwater strategy calls for a holistic approach, that is, besides conserving wetlands, freshwater conservation must include conservation of catchment and watershed areas as well as tackling issues such as pollution and wasteful consumption.

In Asia and the Pacific, WWF's freshwater conservation efforts have focused largely on wetland conservation although quite a number of the organization's forest projects are at sites regarded as important catchment and watershed areas. Since 1962, WWF's spending on wetland conservation in the region amounted to some CHF15 million. Much of the organization's methods of conserving wetlands and forests have been through helping local authorities develop and implement management plans, working with local communities on alternative sustainable livelihood schemes, and promoting awareness.

More needs to be done, especially on the broader aspect of freshwater conservation. A strategic approach to freshwater conservation is needed in the region, taking into account Asia/Pacific's fast paced economic growth. WWF will build up capacity to influence economic development onto a sustainable path. It will also continue to involve local communities in conservation since much of the threats to wetlands and water catchment areas are linked to human activities. These threats

include drainage and conversion of wetlands and catchment areas for agricultural purposes and human settlements, pollution, cutting of wood for domestic use, eutrophication, and illegal fishing and overfishing.

WWF projects will also be more solution-oriented and directly address conservation issues. The organization will develop a few model projects which demonstrate successful freshwater conservation efforts for replication throughout the region. Finally, WWF projects will 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.

This document outlines some of WWF's existing as well as proposed freshwater conservation efforts in Asia/Pacific, both at the regional and national levels, to meet one of the region's most pressing conservation problems today. It is hoped that this document will provide WWF fundraisers and potential donors with an overview of the opportunities available for freshwater 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, email: [afernhout@wwfnet.org](mailto:afernhout@wwfnet.org) or [skchng@fhhickson.com.sg](mailto:skchng@fhhickson.com.sg)

## **REGIONAL WWF ACTIONS**

Although most conservation action is undertaken at the country level, there are those that cut across national boundaries. One important regional action is the pulling together of lessons learnt and disseminating these to the WWF offices in the Asia/Pacific region as well as to international agencies, government departments, non-governmental organizations, grassroots bodies, industries, and corporations to ensure not only a continuous learning process but also as a multiplier of WWF's freshwater conservation actions. WWF also wants to translate its regional freshwater strategy into a highly targeted programme. *Annual budget required amounts to some CHF 200,000.*

One of the more important conventions supporting wetland conservation is the RAMSAR convention. WWF has already provided support to several countries in the region in encouraging them to be a party to the convention and, for those already party to RAMSAR, helping them meet their obligations under the convention. The organization wants to further promote the convention in the region by encouraging countries that have yet to become parties to RAMSAR to sign on, and/or to identify and evaluate potential RAMSAR sites. *An annual budget of CHF 50,000 is required.*

Capacity building is one of the cornerstones in achieving nature conservation in the Asia/Pacific. WWF had supported training of wetland managers in collaboration with Wetlands International (formerly Asian Wetland Bureau), and wants to continue doing so. *Annual budget required is CHF 250,000.*

Several freshwater species in the region are subjected to unsustainable levels of international trade. Some examples include freshwater turtles in southeast Asia (used for food as well as medicine), frogs (frog legs for consumption), and some species of fish, such as the famous Mekong giant catfish and the Arowana fish from Indonesia. TRAFFIC, the wildlife trade

monitoring arm of WWF and IUCN-The World Conservation Union, has offices in the region to track the trade in such species, and is thus contributing to the conservation of freshwater resources. *A total budget of some CHF1.5 million is required annually* for TRAFFIC Oceania, Southeast Asia, and East Asia offices to carry out their work.

A new initiative WWF wishes to undertake in the region is the "*Living Rivers Campaigns*". This will involve awareness building as well as action-oriented campaigns, the structure and nature of which will depend on local target audiences and national situations. The campaigns will focus on high biodiversity river systems, several of which are WWF Global 200 priority ecoregions including the following.

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

Myanmar's Irrawaddy river, including its delta and tributaries, represents a variety of important wetland areas. The area is listed as a Global 200 site for its rich monsoon forests (#40: Northeastern India & Myanmar Hill Forests). These monsoon forests are among the most extensive in Asia. They represent a relatively intact ecoregion despite some fragmentation caused by shifting cultivation and logging. Rich in teak and other commercially important timber species, these forests rank among the richest in bird species for Asia. 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.

- **Mekong Living River Campaign, Southeast Asia**

The Mekong and Salween river basins are another important Global 200 site (#158: Mekong & Salween River Basins) covering China, Cambodia, Laos, Myanmar, Thailand and Vietnam. Southeast Asia's longest river, the Mekong is enormously rich, with about 200 species of fish including the giant Mekong catfish, and many shellfish. The river is currently threatened by a variety of development initiatives including major dam projects. See further information under "National WWF Actions: Indochina".

- **Indus Living River Campaign, South Asia**

The Indus river has been identified as a Global 200 site (#187: Indus River Delta & Rann of Kutch). Home to the last remaining populations of the endangered Indus dolphin, the Indus river has been fragmented by dams. The hydrology of the river and its delta has already been largely altered because of irrigation works. See further information under "National WWF Actions: Pakistan".

## **NATIONAL WWF ACTIONS**

WWF's Asia/Pacific strategy calls for the setting up of a "network of well-managed representative wetland protected areas" and at least one watershed management project in each country where the organization is currently working. These actions will include *integrated conservation and development projects (ICDPs)* which address a host of conservation issues at both practical implementation and policy levels. Actions identified under the regional strategy to promote sustainable use of natural resources, capacity building and environmental education, and reduce and minimise pollution and wasteful consumption, will be integrated in these area-based ICDPs.

In addition, WWF will focus its resources on one or two Global 200 sites in each country and develop these into truly multi-disciplinary ICDPs.

## **China**

The WWF China Programme has been involved in a variety of wetland projects. These include protected area management at two RAMSAR sites - Poyang Lake and Xiang Hai - as well as at Fu Tien, Cao Hai and Xiaman; conservation of wetland species, such as cranes, the Yangtze river dolphin and Saunders's gull; education; and training of wetland managers. Currently WWF is helping China's Ministry of Forestry develop a National Wetland Action Plan, which, when completed, will guide WWF's future freshwater conservation efforts, particularly in determining priority sites. China has over 25 million ha of wetlands, including 11 million ha of marshes, 12 million ha of ponds and lakes, and 3.1 million ha of beaches and salt marshes. These wetlands have broad economic and social value for China's 1.2 billion people - from agriculture and fisheries, drinking water and raw materials for industry and shelter, to flood control. They also support biodiversity of domestic and international importance, including 500 species of freshwater fish and 31 of Asia's 57 endangered waterbird species.

Given their importance, three areas have been listed as Global 200 sites. They are site #159: Central Yangtze River & Lakes; #166: Yunnan Lakes & Streams; and #150: Russian Far East Rivers & Wetlands. In addition, several more have been identified under the Global 200 as globally important areas for migratory birds and butterflies. These include the Yangtze Delta and Sanjiang Plain, and the marshes of Yancheng, Zhalong and Xiang Hai. WWF could work in these areas including supporting one or two freshwater demonstration ICDPs if funds are forthcoming. *Annual budget required for an ICDP amounts to some CHF1 million.*

Meanwhile, WWF and Wetlands International have successfully mobilised a GEF (Global Environment Fund) grant of US\$250,000 to develop a multi-million dollar wetlands management project focusing on Dongting Lake, Sanjiang Plain, Yancheng and Ruoergai marshes.

## **Hong Kong**

One of WWF Hong Kong's success stories is the Mai Po Marshes. After years of lobbying by the organization, Mai Po was declared a RAMSAR site in March 1995. Its status as a RAMSAR site continues even with Hong Kong becoming a Special Administrative Region of China. In August 1997, China's Ministry of Forestry confirmed that Mai Po is the country's seventh RAMSAR site. A favourite resting stop for many globally threatened bird species, it is one of Asia's prime wetlands. The site of WWF's successful education activities, Mai Po is also where the organization trains wetland managers from China. The Mai Po project is also an excellent example of how a reserve can be sustainably managed. Prawns harvested from Mai Po's *gei wais* - shallow shrimp ponds built in the 1940s - are sold in the local markets and proceeds ploughed back to cover reserve management costs.

## **India**

In the past, WWF India supported only a few wetland projects and most of these focused on conserving species such as Siberian and black necked cranes. This later extended to habitat protection and education, namely at Sultanpur and Manipur, as well as review of wetland laws. Today the organization also provides support to existing and potential RAMSAR sites through project IN0064: Support to Conservation of Indian RAMSAR sites (*annual budget required is*

CHF 40,000), and conducts training in participatory rural appraisal (PRA). Held at Keoladeo National Park, these training workshops have been successful in enabling local people to analyse their relationship with the park and contribute to the development of the park's management plan.

Another important wetland WWF is supporting is Pulicat Lake in Andra Pradesh. India's second largest brackish water lagoon, the lake is threatened by unsustainable development activities, notably unplanned aquaculture. WWF is helping to restore the lake's biodiversity, and helping fishing communities develop sustainable fishery practices under project IN0084: Support to CRNIEO for Pulicat Lake. *An annual budget of some CHF50,000 is required.*

In addition, there are two Global 200 wetland sites in India which could be explored for ICDP work. These are the Rann of Kutch (#187: Indus River Delta & Rann of Kutch) and the Sundarbans (#185: Sundarbans Mangroves). The Sundarbans is a vast complex of intertidal and estuarine areas situated on the border of India and Bangladesh where the Ganges, Brahmaputra and Meghna rivers converge in the Bengal Basin. The Sundarbans has extensive mangrove areas providing nursery grounds for the many species of fish and invertebrates as well as the endangered Bengal tiger. *Annual cost of an ICDP amounts to some CHF500,000.*

## **Indochina**

WWF's Indochina Programme covers Cambodia, Laos, Myanmar, Thailand and Vietnam. The extent of each country programme varies from country to country. Brief descriptions of freshwater conservation priorities in each of these four countries follow. Additionally, WWF proposes a "Mekong Living River Campaign" for the Indochina region. The Mekong is a Global 200 site (#158: Mekong & Salween River Basins). Part of the Mekong Living River Campaign's overall strategy calls for maintaining both water quality and quantity of the major tributaries of the Mekong in each of the countries where WWF is working - Cambodia, Laos, Thailand, Vietnam, and China, where the Mekong headwaters begin. This requires the conservation of watersheds and non-protected portions of the tributaries. The campaign will encompass a variety of actions including lobbying and advocating appropriate policies, promoting awareness, and providing technical input to conservation and management issues. *Estimated annual budget amounts to some CHF1 million.*

## **Cambodia**

Since 1995, WWF has stepped up its involvement in Cambodia. It has appointed a technical adviser to assist the Ministry of Environment in biodiversity conservation under WWF Project KH0851: Cambodia Environment Management Process. Under the proposed Mekong Living River Campaign, two sites where WWF can introduce ICDP activities are Virachey National Park (330,000ha) and the Lomphat Wildlife Sanctuary (280,000ha). These areas constitute a significant part of the Mekong watershed and are important for biodiversity conservation. Wildlife found in these areas include the tiger, elephant and wild cattle species. *Annual required budget is some CHF700,000.*

## **Laos**

WWF has yet to be involved in a wetland project in Laos. The organization is hoping to work in the Nakai-Nam Theun Conservation Area which is Laos's largest protected area. Totalling 3,500km<sup>2</sup>, the area is still under extensive and relatively undisturbed forest cover. It is the catchment area for several of the Mekong's tributaries. The biodiversity of the area is extremely

high and species found here include the newly-discovered saola and giant muntjac. Unfortunately, unplanned developments, illegal hunting and encroachment by migrants are threatening the area. If funds are forthcoming, WWF would like to develop and implement a management plan involving local communities and other stake holders. *Annual budget required is some CHF700,000.*

### **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 the Irrawaddy Living River Campaign as mentioned in the section on “Regional WWF Actions” above.

### **Thailand**

Since 1990 WWF has supported a coastal wetland resources conservation project (Project TH0021) which is implemented by a local NGO, Wildlife Fund Thailand. The project’s main objectives are to promote the establishment of conservation areas and capacity building. Project staff work closely with the local communities supporting them in various activities such as establishing community forests and networking. They also push for policy reforms to enable the people to actively participate in formulating and implementing laws relating to natural resource management. *Annual budget required amounts to some CHF110,000.*

An important watershed area WWF has just started work on is the Western Isan forests in northeast Thailand. The forests are 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. Rich in biodiversity, the forests harbour an estimated 420 elephants or 25 per cent of Thailand’s wild elephant population. Other rare species found here include the Sumatran rhino and gaur. WWF project activities include establishing a network of river users groups, monitoring of water quality by schools, promoting non-chemical agriculture along the river banks, reforesting some upper areas of the rivers, looking into the possibility of reforesting a corridor to allow elephants to resume their old migration routes and for use as a community forest by local villagers, investigating the possibility of establishing village-based nurseries for rare orchid production, putting conservation on the agenda of the Mekong Region Development Institute, improving current nature tourism practices, training of local village guides, and conducting a feasibility study for reintroducing captive elephants into the wild. The project will be part of the Mekong Living River Campaign. *Annual budget required is CHF800,000.*

### **Vietnam**

Although WWF has yet to engage in a typical wetland project in Vietnam, some of the priority protected areas under its country programme are very important for freshwater conservation. One of these is Nam Cat Tien which has important marshes and riverine habitats, and where WWF has a five-year US\$6 million ICDP funded by the Dutch Government. In addition, under the Mekong Living River Campaign, WWF hopes to include the Mom Ray Nature Reserve, an important watershed for some of the Mekong’s major tributaries. The reserve is situated in Kon Tum Province, at the point where the national boundaries of Vietnam, Cambodia and Laos meet. It is adjacent to Cambodia’s Virachey National Park and Lomphat Wildlife Sanctuary. Mom Ray is also important for biodiversity conservation: a total of 80 mammal species including tigers, elephants and gibbons, 200 bird species and over 20 reptile species have been recorded here, and

further biodiversity inventories are needed. *Annual budget required is CHF1 million.*

## **Indonesia**

Although the WWF Indonesia Programme has several forest projects at sites regarded as important catchment and watershed areas, it has only a few typical wetland conservation initiatives. A number of wetlands have received support as part of larger terrestrial protected area programmes for example project ID0105: Wasur National Park in Irian Jaya. Others received indirect support through WWF grants to Wetlands International. Another significant wetland initiative was to help the Indonesian Government in integrating wetland conservation in land use development in Sumatra's coastal areas.

If funds are forthcoming, WWF could also consider ICDP work in the following Global 200 wetland sites in Indonesia (*annual budget required for each site amounts to CHF1 million*):

- The rivers and streams of northeastern Sumatra as well as its and Kalimantan's unique coastal wetlands (#186: Sundaland & Eastern Indonesian Archipelago Mangroves). They represent the highest diversity of any freshwater ecosystem in southeast Asia. In addition, the coastal wetlands are threatened by large scale development activities including deforestation, human resettlement schemes and aquaculture activities.
- The deep lakes in Sulawesi (#170: Central Sulawesi Lakes). With a depth of 590 metres, Sulawesi's Lake Matano is the deepest lake in southeast Asia. It and the nearby lakes support many rare aquatic plants, including floating ferns, and endemic freshwater mussels and fishes, as well as numerous bird species.
- The mangroves of Irian Jaya, Indonesia's part of the island of New Guinea (#151: Southern New Guinea Rivers & Streams). The largest in southeast Asia, these mangroves have recently been threatened by exploitation for wood chips.

## **Malaysia**

WWF Malaysia has carried out a fair number of typical wetland projects including species conservation (river terrapins, freshwater fish and crocodiles). It has supported studies of the socio-economic values of freshwater species and assisted Malaysian states in integrating freshwater components in state level conservation strategies. Its long-term research and education programme on turtle and terrapin conservation has provided adequate information to propose critical areas for conservation. The organization continues to look at the need for integrated management strategies for habitats including rivers, estuaries and coastal zones. *Some CHF 100,000 is required per year over three years* to further strengthen turtle conservation efforts with awareness promotion, integrated coastal zone management, and studying the sustainability of the fishing industry in the critical areas.

In the eastern Malaysian state of Sabah, WWF has developed an integrated wetland conservation programme in the Kinabatangan floodplain. The programme protects part of an important Global 200 site (#148: Sundaland Rivers & Swamps), and has already been proposed as a "model wetland project" funded by WWF Netherlands.

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. Tourists flock to the area to see these species here, including the proboscis monkey, orang utan, Asian elephant, flat-headed cat, estuarine crocodiles, hornbills, kingfishers and the oriental darter. Major threats to the area include land conversion of habitat for oil palm plantation and inappropriate tourism practices. Conservation activities here include sustainable community development schemes, tourist management strategies, education and awareness, vegetation surveys and forest rehabilitation. *Annual budget required is about CHF1 million.*

Also in Sabah, WWF has recently started a project at the Likas Wetland Bird Sanctuary. WWF had been lobbying the State Government for protected area status for Likas which finally came in September 1996. Totalling about 25ha, the Likas lagoon is home to over 50 species of resident and migratory birds. The Government has asked WWF to serve on the planning and implementation committee and help in developing a management plan for this bird sanctuary. WWF will also help in developing a nature education centre. Located in Sabah's capital, Kota Kinabalu, and readily accessible - it is close to the town centre and within a two-kilometre radius of approximately 15 schools - Likas has the potential of becoming a major community and educational resource facility. It will provide WWF with a good opportunity to promote the organization's work and conservation issues. *A budget of CHF170,000 is required annually for three years.*

## **Nepal**

The most important wetland site WWF is supporting in Nepal is undoubtedly the Royal Bardia National Park. The park is unique for its alluvial grasslands in the *terai* (Global 200 site #105: Terai-Duar Savannas & Grasslands), and encompasses diverse wildlife habitats such as *sal* and riverine forest, grassland, flood plain and river valleys. Amongst the wildlife found here are several important and endangered wetland species; gangetic dolphins are often seen in the Karnali River which forms the western boundary of the park. In addition, the park harbours greater one-horned rhinos, swamp deer, black bucks, gharial, elephants, wild boar, blue bulls, tigers, leopards and sloth bears. WWF is currently implementing an ICDP project (NP0024: Royal Bardia National Park Conservation Programme) with *an annual budget of some CHF 400,000* provided by the Dutch Government.

WWF's Nepal Programme has also recently developed a project in Kanchenjunga, an important watershed area for the tributaries of the Ganges. A Global 200 site (#95: Eastern Himalayan Alpine Meadows), Kanchenjunga was declared a *Gift to the Earth* by the Government in April 1997. (*Gifts to the Earth* is an exciting 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 has a high density of glaciers including one of the longest in the world, the Kanchenjunga glacier. Mt Kanchenjunga (8,586m) is the world's third highest after Mt Everest and Mt K-2. Project NP0859: Conservation of Kanchenjunga *requires an annual budget of some CHF 500,000*. The Dutch Government is likely to fund this project.

## **Pakistan**

WWF Pakistan has a long standing involvement in wetland conservation under Project PK0019: Conservation of Wetlands. One of the project outputs is a national wetland action plan. Other



activities include identifying wetland conservation priorities, preparing management plans, engaging in environmental education, setting up databases, carrying out species conservation (migratory birds and the Indus dolphin), providing training in wetland management, and initiating community-based sustainable resource use programmes. Much of these activities are focused on wetland areas in the "Indus Flyway"; the Indus river basin is a Global 200 site (#187: Indus River Delta & Rann of Kutch). *An annual budget of some CHF90,000 is needed.*

One of the offshoots of WWF Pakistan's national wetland programme has been the development of a mangrove conservation programme in Sindh and Baluchistan (Project PK0048: Conservation of Mangrove Forests). The Sindh and Baluchistan programme involves setting up an education and training centre near Karachi and initiating community-based conservation activities at several pilot sites in this important mangrove belt. Project PK0048 *needs an annual budget of some CHF500,000* and the Dutch Government aid agency is providing funds for five years from 1997 to 2001.

If funds are forthcoming, WWF can initiate a "Living River Campaign" for the Indus river. This would enable activities, such as ICDP-type demonstration projects, to be carried upstream of the Indus river. *Annual budget required is CHF500,000.*

## **South Pacific**

So far WWF's South Pacific Programme has limited involvement in typical wetland conservation efforts although several of its current projects have significant freshwater components. One is Project PG0013: Conservation of Kikori Basin, Papua New Guinea (PNG) aimed at conserving forestry resources and initiating community conservation activities. Threatened by unsustainable, huge scale commercial logging, the Kikori forests are a vital watershed for an important river basin system. *An annual budget of some CHF1 million is required.*

Another project, also in PNG, is the Community Landcare Project (Project PG0023). The project site has a diverse range of natural habitats including some of the South Pacific's last remaining intact forests. There are also important wetlands such as the Sepik river, Chambri lake, which at 21,600ha is PNG's second largest lake, and a number of lake systems - Gavermas, Blackwater and Wagu lakes. The delta of the Sepik river is part of a Global 200 site (#151: Southern New Guinea Rivers & Streams). Focusing initially on four pilot sites including two important wetlands sites (Sepik and Fly), the project could develop into a model freshwater ICDP. *Annual budget required amounts to some CHF2 million.* The Dutch Government is likely to fund this project.

## **Other Areas**

### **Bangladesh**

WWF had been involved in Bangladesh when it helped develop a management plan for the Sundarbans 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 action has been recommended for the Sundarbans which has the highest priority for tiger conservation for the whole of Asia. A RAMSAR site, the area is also a Global 200 site (#185: Sundarbans Mangroves). According to RAMSAR reports, Sundarbans's forests are also relatively well managed. If funds are available, WWF can conduct a feasibility study and project development mission to enable the organization to identify the role it can play to further improve conservation

of this area, particularly its unique tiger population. *Budget required is CHF50,000.*

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Text for back cover page:

WWF-World Wide Fund For Nature is the world's largest and most experienced conservation organization. It has over 4.7 million supporters and a global network active in 96 countries. WWF aims to conserve nature and ecological processes by preserving genetic, species, and ecosystem diversity; by ensuring that the use of renewable natural resources is sustainable both now and in the longer term; and by promoting actions to reduce pollution and the wasteful exploitation and consumption of resources and energy. WWF is known as World Wildlife Fund in Canada and the United States of America.

## CAPTIONS FOR PICTURES:

Introduction page, pix LAN 2744 or pix NAP 941

Caption LAN 2744: Forests like this are important catchment and watershed areas. Thailand's Western Isan forests, for instance, are the only watershed for rivers supplying water to 10 million people. WWF/Rob Webster

Caption for NAP 941: Forests like this are important catchment and watershed areas. Thailand's Western Isan forests, for instance, are the only watershed for rivers supplying water to 10 million people. WWF/Hartmut Jungius

Regional WWF Actions page, pix LAN 4096

Caption: The Mekong River, Indochina, is enormously rich with about 200 species of fish and many shellfish. WWF's proposed Mekong Living River Campaign aims to maintain both the water quality and quantity of the river and its major tributaries. WWF/Elizabeth Kemf

National WWF Actions

pix NAR 1294 (to be placed near Hong Kong text)

Caption: One of Asia's prime wetlands, Hong Kong's Mai Po Marshes is a favourite resting stop for many globally threatened bird species. It is also the site of WWF's successful education activities and training centre for China's wetland managers. WWF/Jill Ranford

pix PEC 304.05 (to be placed near Vietnam or Indochina text)

Caption: Dr Nguyen Thai Tu has been discovering "new" freshwater species from the rivers of Vietnam's nature reserves. Conservation of these reserves and their rivers allow scientists to uncover nature's secrets, many of which could improve our lives. WWF/Frank Noij

Pix sk18 (to be placed in Introduction section or Indonesia/Malaysia text)

Caption: The endangered Irrawaddy dolphin inhabits north Sumatra's rivers and streams, part of Global 200 site #186: Sundaland and Eastern Indonesian Archipelago Mangroves. WWF/Alain Compost

pix WCS 5104 or pix sk9 (to be placed near Malaysia text)

Caption for pix WCS 5104: Rivers and wetlands provide people with numerous resources to meet their basic needs like food and medicine. WWF/Rob Webster

Caption for pix sk9: Different fish species being dried near the river edge. Rivers and wetlands provide people with numerous resources to meet their basic needs like food and medicine. WWF/Alain Compost

pix FLO 1426 (to be placed near Pakistan text)

Caption: Water hyacinth covering the Trimmu wetland, Punjab, Pakistan, depletes oxygen supply to species living in the lake. A common problem in tropical Asia caused by pollution from sewage effluents or chemical runoffs from fertilized fields. WWF/Mauri Rautkari

pix FRE 2090 (to be placed near South Pacific text)

Caption: Local villagers mapping land-use areas and boundaries of a proposed conservation area in Papua New Guinea. WWF aims to develop model freshwater ICDPs for replication throughout the Asia/Pacific region. WWF/Paul Chatterton

Additional pix LAN 7414

Caption: Mangroves are important breeding and spawning grounds for fish and prawns as well as provide ecological function such as inhibiting erosion. Yet they are being destroyed for timber, wood chips and fuelwood, and conversion to fish and shellfish ponds, or to expand urban areas and agricultural land. WWF/Hartmut Jungius



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