



# Bulletin

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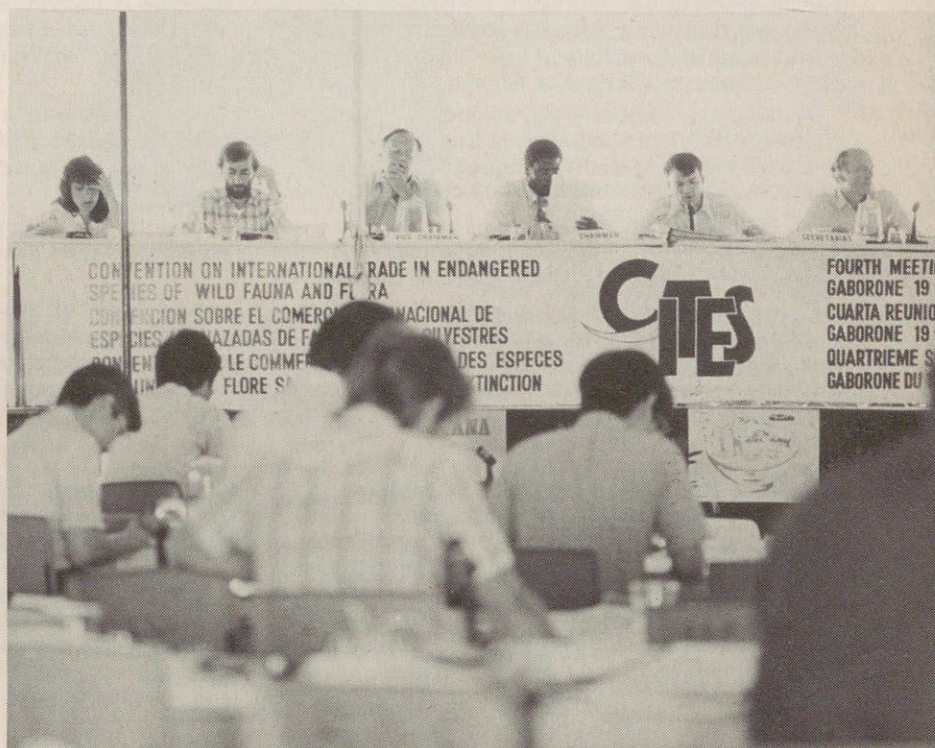
## CITES MEETS IN BOTSWANA

4th Meeting of the Conference  
of the Parties Shows  
Convention has Come of Age

More than 300 participants from 62 countries and non-governmental organizations gathered in Gaborone, Botswana for the fourth meeting of the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 19-30 April. The meeting demonstrated the flexibility of CITES both in according protective measures and where necessary in facilitating legitimate utilization. It also showed that the Convention to which 81 nations have adhered has matured to an international level.

In Gaborone, attempts to relax restrictions on trade in products of wolves, bobcats, lynxes, otters and certain ivory products were withdrawn and a proposal to regulate trade in harp and hooded seals was defeated. The highest protection rating was granted to seven species of whales including the minke, Bryde's, pygmy right and four bottlenose varieties. This, when it comes into effect, will forbid all international trade in these species, except for scientific purposes. The minke and pygmy right whales listing on Appendix I (*a list of plants and animals for which trade is banned, except for scientific purposes*) of the treaty will become effective from January 1986, coinciding with the beginning of the total moratorium on commercial whaling declared by the International Whaling Commission (IWC) last year. Enforcement of the listing of the five other species will begin by 29 July. These decisions give the full support of CITES to the growing international campaign to halt whaling until scientists can monitor and predict whale populations accurately enough to permit sustainable utilisation, without threat of extinction.

Zimbabwe, supported by several other African countries including Kenya, Mozambique, Malawi, and Botswana proposed a reduction of the leopard's CITES protection status from Appendix I to II (*Appendix II includes the species which are not necessarily endangered but which may become so if trade in these species is not regulated*). It was argued that the leopard in Southern and Eastern Africa is hardy,



Over 300 delegates from 62 countries gathered in Botswana for the fourth meeting of CITES.

Credit: Michael Kahn

highly adaptable and in no danger of extinction, while posing a threat to domestic stock and the lives of rural people. With decreased CITES status, problem animals could be shot and their skins and heads exported, so producing revenue from a management operation. However there was intense opposition from delegates who feared this could lead to a revival of the fur trade, with catastrophic results for endangered cats such as the tiger and jaguar which are highly prized for their fur. It was also pointed out that several leopard subspecies such as the Iranian leopard are critically endangered, yet their coats are difficult if not impossible to distinguish from more common varieties, so creating a loophole for unscrupulous dealers.

A compromise quota proposal was accepted leaving the leopard on Appendix I. This would allow the proposing countries a strictly set and managed quota of leopards which could be hunted and traded as per-

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**IUCN to be Represented at UNCTAD.** The Board of the United Nations Conference on Trade and Development (UNCTAD) has accorded IUCN 'Special Category' status. IUCN is therefore entitled to be represented at meetings of the Committee on Commodities and at meetings of the Board when it considers specific matters falling within the terms of reference of that Committee.

**Study Reports Philippine Crocodile on Verge of Extinction.** One of the world's most threatened crocodilian species may soon disappear from the wild altogether. The Mindoro or Philippine Freshwater Crocodile (*Crocodylus mindorensis*) is in immediate danger of extinction due primarily to agricultural and industrial development in its lowland habitat areas. Prospects for survival look bleak as habitat protection efforts conflict with existing government priorities for economic development programmes in rural areas.

IUCN/WWF initiated a study on the distribution, status, natural history and conservation of the Philippine Crocodile in 1980. This project was administered by the Smithsonian Institution and field work was conducted with the aid of the Silliman University Environmental Centre. As a result, it is now evident that few extant populations or individuals are known to exist in the wild. Evidence that several individuals exist in the vicinity of Maatrop Barrio, Pagatban River, Negros Oriental, was verified in 1981. An individual was observed in Calarian Lake, Zamboanga City in 1979 and in Midsayap (Linguasan March), North Cotabato in 1981. *Crocodylus mindorensis* in private collections indicate the species exists in the vicinity of Lake Naujan, Mindoro Oriental (1981) and the Nabunturan area, Davao del Norte (1979). Urgent measures will need to be taken if this species is to survive.

The Silliman University Environmental Centre (SUEC) has recently started a crocodile breeding programme at the University's Marine Laboratory in Dumaguete City in order to propagate the species in captivity and to learn more about its behaviour — especially its reproductive biology. Eventually when secure sanctuary areas are available, Philippine Crocodiles bred in Dumaguete City could be released back into the wild.

The Philippine Crocodile, one of two crocodile species to occur in the Philippine Islands is endemic to the country. The other species, the Indo-Pacific Crocodile (*Crocodylus porosus*) is widely distributed in the Indo-Pacific region from southwestern India to northern Australia and New Guinea.

Crocodiles were once a conspicuous element of the lowland fauna of the Philippine Islands. They occurred in mangrove, estuarine, river, lake and marsh habitats. Conservationists have long been concerned with the rapid deterioration of lowland habitats in the Philippine Islands and the effect of commercial agriculture and development on the lowland terrestrial and aquatic faunas. Crocodiles are especially vulnerable, restricted as they are to aquatic habitats that are easily modified for human utilization, be it fish ponds or rice paddies.

**Elephant Population Declines in Malawi.** Poaching has been a prime factor in the sharp decline in Malawi's elephant population according to a recent survey partially sponsored by IUCN/WWF in cooperation with local authorities and in conjunction with major elephant management studies conducted for the Malawi government by Richard Bell, Vice Chairman of the IUCN SSC Elephant Specialist Group. Only about 1900 exist today in the country's parks and reserves. Easy access to permits and ammunition is one of the reasons for this unfortunate trend. Increasing use of shotguns in Malawi has another effect. A large number of young elephants suffer from infected pellet shot wounds and die a lingering and painful death. Another hunting method growing popular among poachers is the use of boards with long nails which are hidden on elephant trails under a cover of grass. Upgrading law enforcement capabilities in conservation areas may be part of the answer to help preserve the existing elephant population in the country.

**IUCN Membership Review.** As of this printing of the *Bulletin*, the IUCN membership stands as follows:

|                                |     |
|--------------------------------|-----|
| States                         | 58  |
| Government agencies            | 118 |
| Non-governmental organizations |     |
| - National                     | 285 |
| - International                | 24  |
| Affiliates                     | 6   |
| Total                          | 491 |
| Countries represented          | 114 |

**Good News from Greece.** On 14 March 1983, Greece ratified the Berne Convention on Conservation of European Wildlife and Natural Habitats (1979).

**Environmental Seminars For Greek Shippers.** The Greek Minister of Mercantile Marine, Mr. George Katsifaras, opened a series of seminars, aimed at mobilizing the Greek shipping community in a drive to eliminate ship-generated marine pollution. The opening seminar on 28 April for owners and senior management was followed by technical seminars for masters, deck and engineer officers. The seminars were organized by the Hellenic Marine Environment Protection Association (HELMEPA), which was formed in 1982 with the support and guidance of a group of leading environmental organizations including: the Club of Rome, IUCN, WWF, the International Ocean Institute (IOI) and the International Institute for Environment and Development (IIED). HELMEPA estimates that 80-90 per cent of ship-generated pollution results from operational carelessness and lack of knowledge. Operational techniques aimed at eliminating marine pollution, such as crude oil washing, bunkering and bilge discharge, were among a variety of items addressed at the seminars.



# A PIONEER'S REWARD

*The IUCN Bulletin recently asked Dr Jean-Paul Harroy, one of the Union's founding fathers, to record his personal recollections of IUCN's early days, thoughts on its present activities and prospects for success in the future. Excerpts from his article translated from the original French follow:*

On 5 October 1948, I was elected Secretary General of the International Union for the Protection of Nature (IUPN). At the same time, I became director of the IOPN, the International Office for the Protection of Nature which was created in Brussels by P.G. van Tienhoven, the eminent conservationist from the Netherlands. My task was to incorporate it into the IUPN, which would inherit, among many other things, its excellent library.

Credit for making the IUCN possible must be shared by the Ligue Suisse pour la Protection de la Nature which organized two preliminary conferences in 1946 and 1947. It must also be shared by the French government, which bore the cost of the Fontainebleau Conference held in October 1948 to set up the Union, and by Unesco — still very young at the time — which sponsored the future Union and contributed indispensable 'bread and butter money' during the first few months of operations.

In recognition of the important role played by the Ligue Suisse pour la Protection de la Nature, its President, Dr Charles Bernard, was appointed President of the Union, a position he held until 1954. France, another of the promoters, supported the Union in its early days primarily through the activities of Professor Roger Heim who became President at the time of the Copenhagen Assembly in 1954. Finally, much credit goes to Sir Julian Huxley, then Director General of Unesco, who took personal charge of the Union during its early stages. He saw to its financing and participated in the early meetings, particularly those held by the newly appointed IUPN Executive Council on which Harold Coolidge, another future President and pillar of the Union, also sat. At those meetings, the first programme of action of our young institution was to be drawn up. In order to give a correct assessment of the main aspects of the activities laid down, and then to trace the Union from its beginning, we must look back on the events of that period.

Before 1940, the enlightened few who had already become aware of the need to protect nature were, for the most part, naturalists. Without proper communication, concentrated mostly in Europe and North America and concerned primarily with the disappearance of species, they lacked, on the whole, any real political influence.

Between 1940 and the Fontainebleau Conference, ideas moved ahead. The danger of wasting and misusing natural resources was becoming increasingly ap-



Dr Jean-Paul Harroy

Ars-Nova, Bruxelles

parent. The desire to join in efforts to achieve a better understanding of this danger and to combat it found expression. Regionally, this gave rise to some important early conferences. For instance, in 1948, an inter-American conference was held in Denver and a Pacific area conference in Honolulu. Internationally, this impetus was simultaneously given definition in the negotiations on the creation of the IUPN, and at a meeting of the UNSC-CUR (United Nations Scientific Conference on Conservation and Utilization of Resources) convened by the United Nations in 1949 at Lake Success.

It may be noted that the United Nations was already advocating the rational use of renewable natural resources while the founders of the IUPN kept to the concept of protection, as indicated in the Union's name. During my term as Director of the Union until my departure in 1955, I had continually heard the Union criticized as being behind the times. However, that came to an end in 1956 at Edinburgh where the IUPN officially became the IUCN.

The question often asked today is what were the early objectives of those in charge at the IUPN after its creation? Here is an overview of the first programme drawn up by the Council in 1948 which I was asked to implement:

1. The transformation of the existing tiny nucleus of European and American naturalists already dedicated to conservation into a powerful, constantly expanding and primarily Third World oriented network of conservationists including politicians, economic officials, government leaders, ecologists, field specialists, lawyers and NGO heads. The idea was that they would come to know each other at meetings, then later would correspond to inform and assist one another.

2. Insofar as the Union's extremely limited means permitted, the promotion, especially in the Third World, of:

- a) information and public education
- b) local conservation action, especially in the form of legislation, management practices and voluntary involvement
- c) all forms of coordinated ecological research with special focus on identifying and checking problems primarily resulting from the extremely disturbing growth of the world's population
- d) voluntary participation in major international action for the 'protection of nature'.

We must keep in mind the great difference between the world situation then and now if we are to give a fair appraisal of the pioneers' work and an answer to the question of what the IUPN did from 1948 to 1955 towards realizing these objectives.

Thanks to Unesco, the conference at Lake Success, in 1949, provided a magnificent start in accomplishing objective One.

With the intention of pursuing a policy of periodic personal contacts and of collective interdisciplinary exchanges of new ideas, the Council decided to hold annual meetings on a temporary basis and incorporated a 'technical meeting' into each of their General Assemblies. The Assemblies at that time met biennially (Brussels 1950, Caracas 1952, Copenhagen 1954), but purely technical supplementary meetings were also called for in the intermediate years (The Hague 1951, Salzburg 1953). It took a great deal of effort to organize and document these meetings. Later, although the meetings became less frequent, the first two objectives were already on their way to being accomplished. The reputation of the Union was established and the global network of 'fellow conservationists' grew and diversified considerably in a remarkably enthusiastic and friendly atmosphere.

On the basis of the first concrete actions taken after Fontainebleau, the beginnings of the 'Commission' idea took shape. The first one dealt with Education. The Survival Service was established following the Lake Success meeting, but did not become a Commission until 1956. The Commission on Ecology was established in 1954.

A fairly large number of 'projects' such as teaching programmes in the Third World, international nature camps and Lee Talbot's survey of twelve of the world's greatest mammals threatened with becoming 'the fossils of tomorrow' were already financed by Unesco or other sponsors. The Caracas Assembly of 1952 took the risk of tackling the real problem—overpopulation. It provoked such an outcry that unfortunately a similar risk was not taken again, until 1983, with the agreement between the IUCN and the IPPF (International Planned Parenthood Federation). (Editor's Note. A Resolution was also passed by the 15th Session of the General Assembly in New Zealand in October, 1981, which "recognizes that the conservation of the en-

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# INSIDE IUCN

## DEMAND FOR RHINO HORN FALLS

Since the publication of his authoritative book **Run Rhino Run** in 1982, Dr Esmond Bradley Martin has continued carrying out investigative research on international trade in rhino products under the sponsorship of IUCN and WWF. From October 1982 to February 1983 he visited ten Asian countries in order to discourage pharmaceutical wholesalers from further dealings in rhino products and to explain to practitioners of traditional Chinese medicine why they should no longer prescribe rhino drugs. He was able to update his information on the present state of the international trade in rhino products.

"I discovered that despite a sharp decline in the amount of new rhino horn reaching the world market from 1980 to 1982, there has generally been only a small increase in its retail price in most Asian countries," he noted. This is an encouraging factor pointing to a possible decrease in demand for rhino horn. Had the demand for rhino horn continued on the same scale as it was up to three years previously, there would have been a substantial price increase relative to its decreasing availability.

Dr Martin has found that the quantity of new horn reaching the world market has fallen from eight tonnes per year between 1972 and 1978 to less than four tonnes annually from 1979 to 1982. Since the number of rhinos in Africa was reduced by half during the 1970 decade, poachers have now found it more difficult to locate rhinos. Furthermore, some of the African countries which had been among the main suppliers of rhino horn (Kenya, Zimbabwe and South Africa) have initiated tactics which in turn have greatly restricted the movement of rhino horn across their borders.

In reporting on the retail prices for rhino horn in Asia, Dr Martin found that on the average they have increased by only 20 percent since 1979, about 8.5 per cent a year, roughly the same as inflation. By contrast, the retail price for rhino hide has gone down. In Hong Kong, a kilo has decreased in retail price from \$423 in 1979 to \$376. The decrease in Singapore is even more staggering during this period: from \$923 to \$635.

There are many reasons for the declining demand in rhino products evident today. Dr Martin points to some of them:

1. Hong Kong and Japan have stopped importing rhino products in 1979 and 1980 respectively (these two countries have been the largest consumers of rhino horn for medicinal purposes). In Hong Kong, where pharmaceutical traders produce numerous books and brochures on traditional drugs, these now include explanations on why rhino horn is no longer being imported. In Japan, the government itself sent letters to pharmacists requesting that they promote the use of substitutes for rhino horn. Such actions are commendable: they have helped to lower domestic demand and may also discourage illegal imports.

2. Saiga antelope horn is now much more widely used as a fever reducing drug

in Asia. It is cheaper and more acceptable as a substitute for rhino horn in traditional medicine.

3. Hong Kong, the major entry point for most traditional Chinese drugs, can now only supply stocks of rhino horn imported before the 1979 legislation. Hong Kong traders who do not want to lose their rhino horn customers to foreign pharmaceutical firms are doing their best to sell other drugs as substitutes.

4. The sharp rise in the wholesale price of rhino horn (which was \$35 a kilo in 1972) led to the appearance of fake rhino horn shavings and tips of water buffalo being marketed under the name of rhino. This has made customers suspicious. Consequently many prefer to buy a packet of dried herbs or saiga antelope horn when in doubt about the authenticity of the rhino product they are offered.

5. Publicity on the decline of the rhinos has had an impact in Asia discouraging would-be customers for rhino horn (though it is often not the concern for conservation that is at play but rather the idea that rhino horn may no longer be available).

These findings are encouraging. But the task of curtailing effective trade may still be a long way off. Dr Martin points to the major challenges in this area in the years ahead.

1. **North Yemen:** Even though the government made rhino horn an illegal import in late 1982, it is still coming into the country. North Yemen is close to African rhino sources and the demand remains high in the country. Traders are arriving on scheduled airline flights to Sanaa with rhino horn from southern Sudan in their baggage.

2. **Singapore:** During the past few years there has been a definite increase in the amount of rhino horn and skin coming into Singapore from Sumatra because

Singapore dealers generally offer higher prices, and horn can freely enter the country. There is not even a duty levied on rhino products. The simplicity of getting rhino horn on the market in Singapore is why Indian rhino horn is being smuggled out of Calcutta to this destination. There has also been a recent upsurge in poaching of Indian rhinos in Assam.

3. **China:** The export of large quantities of various manufactured tablets containing rhino horn continues. These are found in traditional shops throughout Asia — in Japan, South Korea, the Philippines, as well as in Singapore, Hong Kong and Macao. In selling such manufactured medicines, the traditional pharmacists continue to cater to the demand for rhino horn. Since the rhino horn is not readily identifiable in these drugs from China, they are technically allowed to be imported countries which have ratified CITES.

4. **Hong Kong:** Hong Kong traders are legally allowed to continue to export their old stocks of rhino horn. Since 1976, when they had to obtain licences for rhino horn, 2535 kilos have either been consumed domestically or exported. Additionally, there are some stocks of rhino horn held in Hong Kong which have never been registered, and some of them are now being smuggled out, mainly to South Korea.

5. **South Korea:** Today this country is one of the most important consumers of rhino horn. It is still legal to import the horn there if it is declared and the 42.5 percent tax levy is paid on it. In both Seoul and Pusan, rhino horn is sold to the public. The official import statistics for 1981 record 142 kilos of rhino horn entering the country though the total annual import may well exceed those figures.

In the years ahead, saving the rhino depends on tackling successfully these and many other related conservation problems.



Chinese medical shop has rhino horns on display in front window. Credit: Michèle Dépraz/WWF



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sonal effects, without re-stimulating the fur trade. This will be reviewed at the next CITES meeting in two years.

In a similar issue, proposals by the United States and Canada to partially or completely lower the protection status of several North American furbearing animals popular in hunting and commercial trade, such as the wolf, lynx, bobcat and otter, were withdrawn. A number of conservation organisations feared international trade in furs of these animals would lead to illegal hunting and the possible extinction of highly-endangered related species in Europe. It was also feared that the already high and increasing level of legal hunting of these animals in North America (90,000 bobcats killed yearly out of population of one million) would rocket with relaxation of trade controls.

Parrots are particular prey in commercial trade and the CITES meeting granted the highest protection to three extremely rare south American parrots including the red-fronted macaw. All but three parrot species are listed by CITES.

A significant threat to many thousands of plants is posed by collectors, and United States proposals to list several dozen plant species (mostly cacti) in CITES Appendix I were a recognition of this. More than half the proposals were accepted.

The CITES Agreement, known as the Washington Convention, was drawn up in 1973 to regulate global trade in animals and wildlife products such as furs and ivory. It aims to prevent endangered and threatened species from becoming extinct through commercial over-exploitation. The Botswana meeting marked the tenth anniversary of the Convention. CITES meets every two years to review wildlife trade regulations and overall implementation of the Convention.

The meeting was officially opened by President Masire of the Republic of Botswana who said that although people and nations should be the protectors of their own wildlife, international co-operation is essential for the protection of certain species against over-exploitation through international trade. "Only poachers and other illegal dealers in wild fauna and flora need be apprehensive about the Convention, and indeed, the more apprehensive they are the better," he said.

On the opening day of the meeting, Dr Mostafa Tolba, Executive Director of the United Nations Environment Programme paid tribute to the achievements of CITES in the last ten years calling it "a Convention, that in less than a decade has become the most widely supported of all the conservation Conventions. CITES has played a significant role in demonstrating both the economic importance of controlling the wildlife trade and in the value of conservation as a whole," he said.

Noting the meeting marked the tenth anniversary of CITES, Standing Committee Chairman, Mr Samar Singh (India), said



*In ten short years, CITES has matured to an international level. There are 81 nations that have adhered to the Convention.*

Credit: Michael Kahn

the Convention was born in one of the main consumer countries.

"It is appropriate and very significant that the tenth anniversary is being witnessed here in a region with the largest number of producer states, because the entire philosophy of CITES is founded on the bed rock of deep concern and co-operation between the producing and consuming countries," he said.

The meeting in Botswana provided an excellent opportunity for delegates from consumer countries to consult with their colleagues in an important developing region, to listen to their views and problems, and to see at first hand the local conditions that require sensitive conservation, benefitting both wildlife and man.

Wrapping up the two week session, CITES' Secretary General, Eugene Lapointe noted that one of the most significant results of the meeting is the evidence that CITES has reached maturity at an international level. "CITES matured to an international level in terms of philosophy and approach to the solution of the problems," he said. "People come to plenary

sessions now with an acute knowledge of how international systems work. They do their pre-negotiation and consultation before the sessions." In addition, other symptoms of the Convention's evolution to maturity were in evidence. "Some of the principles that have been established as a result of certain decisions such as the setting of quotas for leopards may be particularly important for the future of CITES," Mr Lapointe said. In its ten brief years CITES has come a long way. □

*This article is based on materials compiled by Robert Soutter of WWF who attended the CITES meeting in Botswana.*

**Note:** The IUCN Bulletin wishes to call its readers' attention to the fact that in the article by Duncan Poore *Deforestation and the Population Factor* (IUCN Bulletin January-March, 1983), the forest assessment mentioned was a joint UNEP/FAO activity for the GEMS programme which was supported very largely by the Environmental Fund of UNEP.



# INSIDE IUCN

## THE TIGER TODAY

### AN OVERVIEW

by Peter Jackson

If you go to India these days hoping to see a tiger, you have a good chance of seeing one. It was not like that ten years ago. Then tigers were heading for extinction and hunting pressure had forced them to lead an even more secretive life than normal. But today, as a result of intensive conservation efforts, tigers have greatly increased in numbers and are more easily seen, especially in reserves where they have been habituated to the presence of visitors.

Tiger conservation in India and Nepal has been a major success story and a model of cooperation between governments and conservation organisations, principally IUCN, WWF, and the US-based Smithsonian Institution.

The alarm about the rapid decline of the tiger was sounded at the IUCN General Assembly in Delhi in 1969, when the then Director of the Delhi Zoo, Kailash Sankhala, presented his estimate that no more than 2500 tigers survived in India. Commercial hunting was still in full swing, and becoming more and more deadly as tiger habitat gave way to human settlement. Seven other races of the tiger were already in the IUCN Red Data Book, and now the Indian or Bengal tiger joined them. This meant that the whole species was now threatened. The Assembly called on all countries with tigers to ban hunting and start conservation measures.

Obviously large sums of money were required, and Guy Mountfort, a WWF International Trustee, proposed a fund-raising campaign for \$1,000,000 for Operation Tiger. Such a well-known and magnificent animal immediately attracted publicity and money began to flow in. But crucial to the success of Operation Tiger was the manner in which the governments of India and Nepal responded. In 1972 Guy Mountfort met the Indian Prime Minister, Mrs Indira Gandhi, who the very next day established a task force of tiger experts who rapidly produced a comprehensive plan based on saving the whole ecosystems of favourable tiger areas. In Nepal King Birendra's government turned three of the country's finest royal hunting areas into reserves for tiger.

On 1 April 1973 India's Project Tiger\* was launched, appropriately in the Corbett National Park, which had been dedicated by the government to the memory of a man who, despite having had to hunt down man-eaters, was the big cat's greatest defender and had predicted many years earlier that it might be driven to extinction if not given protection. Kailash Sankhala, who had championed the tiger at the IUCN



*There may be up to 6000 wild tigers left in the world today.*

Credit: John Mackinnon/WWF

General Assembly, was appointed Director of the project, backed by one of Mrs Gandhi's most dynamic Cabinet ministers, Dr Karan Singh, as Chairman of the Project Tiger Steering Committee.

Priority was given to protection of the tiger and other animals from hunting, and of the forest from over-grazing by livestock and excessive harvest of timber and other products. Kailash Sankhala's team of picked forest officers set to work to bring these scourges under control. A hunting ban had been imposed in 1972, despite the opposition of some who insisted that there were still plenty of tigers, but poaching for skins, which fetched large sums on the international market, continued, and farmers were poisoning tigers by putting pesticides into the carcasses of livestock they had killed.

There have been battles with poachers, with deaths on both sides, and clashes with graziers trying to assert rights to graze their livestock in the reserves, which became increasingly attractive as the vegetation responded to protection. Whole villages have been moved out of reserves, the government providing them with new living necessities, such as wells, and preparing land for cultivation. Medical centres, temples and schools have also been provided.

The Indian government allocated its own funds for most of this work. IUCN/WWF were able to support Project Tiger by providing equipment and expertise. The aid included field equipment, such as jeeps, trucks, motorcycles, nightviewing scopes, and capture and tracking materials; radio networks of special value for combatting

poaching and forest fires, as well as general communication; office equipment, including typewriters and calculators; and books and journals. IUCN arranged for advice to be given by leading world experts in the techniques of capture and tranquillisation of wild animals, and in monitoring animal populations and vegetation. The 1979 census of tigers in India counted 3,012, an increase of 60 per cent over the 1827 recorded in 1972.

Meanwhile, in Nepal, the Smithsonian Institution launched a long-term study of the ecology of the tiger by Nepalese and American scientists in the Royal Chitwan National Park. Tigers, as well as leopards, bears, and deer, were captured by darting with tranquillisers and fitted with radio collars so that they could be tracked. The study has produced invaluable information about the daily life, movements and relationships of these various animals, and provided a scientific basis for management. Apart from supporting the Smithsonian study, IUCN/WWF also provided equipment for Nepal's reserves. It is estimated that there may now be up to 300 tigers in Nepal.

Indonesia and Thailand also launched major tiger conservation programmes with IUCN/WWF assistance. Sadly, it was too late for the Bali tiger, the last of which was shot in 1937, and despite efforts to save the Javan tiger in its last sanctuary at Meru Betiri in eastern Java it appears that this sub-species has now vanished from the earth. In 1979 there were definite signs of only three, and there has been no evidence for the past three years.



The Sumatran tiger survives, but, despite legal protection, it is still heavily hunted throughout the island, even by officials. No reserves have so far been established specifically for tiger, and in some places the cause of tiger conservation is suffering because some have become cattle lifters and man-eaters.

A group of reserves in northwest Thailand is believed to contain a large population of Indo-Chinese tigers—and this sub-species is still found in other reserves in the country, such as the Khao Yai National Park. There are also Indo-Chinese tigers in peninsular Malaysia (200-250), and unknown numbers in Laos, Cambodia and Vietnam, as well as in Burma, where the Indian tiger is also found.

Bangladesh is estimated to have 300-350 tigers in the mangrove forests of the Sunderbans, which fringe the coast of the Bay of Bengal. Man-eaters are unusually common in the Bangladesh Sunderbans and its extension in India. IUCN/WWF have also supported a study of the man-eater problem as well as providing equipment for conservation programmes.

The Caspian tiger is another sub-species that appears now to be extinct. Soviet scientists have reported that it has definitely vanished from their territory. Hopes that some might be found in northwest Iran led to an intensive, but unsuccessful search for signs. Some fresh skins appeared in eastern Turkey in 1973, but a subsequent survey showed no indications of tiger.

In northeast Asia about 300 Siberian tigers survive in reserves in the Soviet Union and China. But the Amoy, or Chinese tiger, is thought to number fewer than 100. Its range included some of the most heavily populated areas of China and it suffered grievously from having been officially declared as a pest to be hunted down until quite recently. It is now protected, but Chinese scientists say that local people still try to kill any tiger they detect.

All told there may be up to 6000 wild tigers left in the world today. Except in Burma, they enjoy full legal protection, and with the success of Operation Tiger the species is reasonably safe, if conservation measures are maintained. The programme has had a much wider impact on wildlife conservation as a whole through the publicity it has generated, and because the tiger can only survive if it has sufficient prey. That, in turn, depends on a healthy forest habitat. This was the basis for the ecosystem approach of Project Tiger in India, which has been so successful. At the same time forest conservation has benefited agriculturalists in surrounding areas by protecting water supplies.

There has always been something of a love-hate relationship in the human view of wildlife, which can often come in conflict with human activities. Deer, monkeys, birds and insects raid crops; and people are killed and injured by elephants, bears and snakes, as well as by tigers, lions and leopards. But the man-eating tiger, in particular, evokes special horror. Thus an outbreak in one district of northern India, where over 100 people have been killed by tigers since 1978, has inevitably aroused

tension and questions about conservation of a potentially dangerous animal.

Experts from Project Tiger have pointed out that human beings are not normal tiger prey, but accidents can occur when tigers are surprised and attack as a defensive reaction. A few tigers also turn to man-eating because of an injury which handicaps pursuit of normal prey, or because chance encounters teach them that humans are easy to catch. These man-eaters have to be shot or tranquillized and removed to zoos.

While people and tigers have co-existed for centuries, many people now living in tiger areas are immigrants with no experience of dangerous wild animals. They may behave in ways which expose them to attack. Therefore the Project Tiger experts have recommended ways in which people in the area affected by man-eating tigers can adjust their activities to minimise the risk. At the same time they propose to improve management of a nearby reserve to make it

less likely that deer and tiger will be attracted to agricultural areas, and to improve monitoring of the behaviour of tigers which occurs there so that potentially dangerous ones can be dealt with.

While man-eating is a limited, though none the less serious problem, it is only one facet of co-existence of humans and wildlife. Animals are a necessary part of natural ecosystems, which are vital to human welfare, and humans may have to adjust their lives, where necessary, to accommodate this fact. □

*\* Note: WWF's overall campaign is called 'Operation Tiger'. The Indian Government's programme is 'Project Tiger'.*

*Peter Jackson is a former foreign correspondent for Reuters and former information director at WWF-International. He was Project Officer for Operation Tiger.*

## BALD IBIS SURVEYS LEAD TO NEW PARK



*The bald ibis in Biregik, Turkey*

Credit: Udo Hirsch/WWF

Surveys of the population of the endangered bald (Waldraup) ibis in Morocco have led to a proposal for the creation of a new national park. The Prime Minister of Morocco, Mr Maäti Bouabid noted that plans to create the Massa National Park in the Agadir region of the country are underway. He made his remarks to the International Symposium on the Management and Conservation of Wild Mediterranean Fauna held in Fez on 16 and 17 March. IUCN/WWF population surveys have shown that as of 1983 the world population of the bald ibis is estimated to be less than 400 with 364 living in Morocco. The proposal for the park to preserve the ibis and its feeding and breeding grounds, was made by the Moroccan Water and Forests Department with assistance from IUCN/WWF.

The future park will serve a number of functions. A prime objective will be to contribute to the well-being of the human communities there while conserving functional ecosystems, protecting wild animal and plant species, promoting rational and sustainable use of land and encouraging sensible tourism. In order to meet this diversity of needs, the park and its surroundings will be divided into specific areas: a natural zone, a traditional use zone and a development zone. In the natural zone, plant and animal species will be fully protected and no form of land exploitation will be permitted. Protection for flora and fauna will also be a key element in the traditional use zone but certain traditional practices in agriculture, forestry and grazing will be permitted. The development zone comprises the sectors where the majority of the local population lives, and where rational land use management will be instituted to improve the quality of life.

The proposed park is a strip of land between Agadir and Tiznit some 65 km long and 10 to 15 km wide. Its location makes it a good resting and wintering area for a large number of migratory palearctic birds. The region of the Massa Wadi is home for more than half of the world's bald ibis nesting population and one of the largest colonies of the great cormorant in Morocco. The development of the park will serve to protect the natural environment against the effects of irresponsible tourism and faulty land use management — existing threats posed by the projected tourist and agriculture boom in the Agadir region in the coming years. At the request of Moroccan authorities IUCN has agreed to provide management planning for the future national park, to help set up a training programme, to stimulate public interest and to provide logistical support with financial assistance from the World Wildlife Fund. □



# INSIDE IUCN

## THE BALI ACTION PLAN

The World National Parks Congress, held in Bali, Indonesia last October took very seriously its mandate to provide priorities for future action. The 450 specialists in national parks planning, management, research, and promotion focussed most of their activities over the two weeks of the Congress on leading to clear and explicit guidelines for the future.

The series of 20 recommendations, published in the **IUCN Bulletin**, provided the framework for action. In addition, working groups from the world's eight biogeographic realms presented reports on priorities for each realm, and many of the case studies and other presentations provided examples which should be emulated more broadly in the future; the 'future directions' addresses from each realm were particularly pertinent in providing thoughtful analyses of future trends. Based on this material, the major points of an action plan were presented to the closing session of the Congress. Further work on the plan was done at the IUCN Secretariat, resulting in the **Bali Action Plan**, which is now being circulated widely to enlist support and develop projects for implementing the plan.

The **Bali Action Plan** recognizes that there are already competent government agencies in most countries whose responsibility is the management of national parks and other protected areas, and that each of these agencies is already carrying out a programme of work that is relevant to the needs and priorities of the country involved. However, the Congress participants also recognized that there was a serious lack of understanding of management tools (such as biogeography, zoning, monitoring, training procedures, protected area economics, and many others), that budgets are not always allocated to the most important priorities, that management plans are still the exception rather than the rule, that relevant information is not flowing as well as it should, that training is lagging far behind needs, and that government officials and the public generally undervalue the role of protected areas in environmentally-sound development.

The **Bali Action Plan** aims to provide guidance and assistance to those agencies which are interested in improving their own management effectiveness in meeting the objectives for which their protected areas were established. Clearly, this is not the work of the IUCN Secretariat alone; it must involve all parts of the Union — State Parties, Government Agencies, and Non-governmental Organizations — as well as IUCN's major international partners in conservation: UNEP, Unesco, FAO, and the World Wildlife Fund.

The ten interrelated and mutually-reinforcing objectives of the Bali Action Plan, with a short list of necessary activities, are as follows:

**Objective 1. TO ESTABLISH BY 1992 A WORLD-WIDE NETWORK OF NATIONAL PARKS AND PROTECTED**

**AREAS, TO COVER ALL TERRESTRIAL ECOLOGICAL REGIONS.**

**Activity 1.1** Develop and make available to all responsible for protected areas, tools and guidelines for the identification and selection of natural areas critical for meeting the objectives of conservation and for supporting development.

**Activity 1.2** Promote necessary technical, scientific and financial support for the identification, selection, planning and management of protected areas which fit strategically into the world network.

**Activity 1.3** Further develop and distribute a biogeographical classification system for use in the global analysis of protected area coverage.

**Activity 1.4** Develop and distribute a more detailed biogeographical classification system with a flexibility of scale which can be used in the analysis of protected area coverage at a variety of regional and national levels.

**Activity 1.5** Promote the detailed evaluation at the regional and country level of protected area coverage.



**Objective 2. TO INCORPORATE MARINE, COASTAL AND FRESHWATER PROTECTED AREAS INTO THE WORLD-WIDE NETWORK.**

**Activity 2.1** Develop and distribute concepts and tools for the establishment of protected areas in marine, coastal and freshwater environments.

**Activity 2.2** Develop a classification system for categories of marine, coastal and freshwater protected areas.

**Activity 2.3** Further develop and distribute biogeographical classification systems for marine, coastal and freshwater protected areas, at both the global level and at the regional/national level.

**Activity 2.4** Incorporate scientists, managers, administrators and supporters of marine, coastal and freshwater conservation into the protected areas community.

**Activity 2.5** Promote the establishment of marine, coastal and freshwater protected areas by all states, including the extension of all currently protected littoral areas into the aquatic environment.

**Activity 2.6** Promote cooperation between neighbouring nations sharing resident and migratory species to establish networks of protected areas and other regulations to meet the critical needs of those species,

with special priority for threatened and endangered species.

**Objective 3. TO IMPROVE THE ECOLOGICAL AND MANAGERIAL QUALITY OF EXISTING PROTECTED AREAS.**

**Activity 3.1** Develop and make available tools and guidelines for the evaluation of the ecological capacity of protected areas to maintain living resources, and the evaluation of area management to ensure that appropriate measures are being applied.

**Activity 3.2** Promote the development of concepts and methods which will lead to scientific principles for management and support the continuous analysis of conservation requirements for each area.

**Activity 3.3** Document the living resources contained in protected areas, including preparing and disseminating inventories of wild species and populations of known or likely value as genetic resources.

**Activity 3.4** Develop and implement a system of reporting on protected areas under particular threat.

**Activity 3.5** Support a systematic approach to the preparation of area and system management plans which provide for management and development to be in accordance with an appropriate range of conservation objectives.

**Activity 3.6** Reinforce measures to reduce the external threats to protected areas.

**Objective 4. TO DEVELOP THE FULL RANGE OF WILDLAND MANAGEMENT CATEGORIES.**

**Activity 4.1** Develop and make available the concepts and tools necessary for the design and implementation of each category, in both terrestrial and aquatic habitats.

**Activity 4.2** Establish pilot protected areas for each category, within each realm, to demonstrate to political leaders and local peoples the importance of these alternatives for supporting social and economic development through sustainable approaches to resource management.

**Activity 4.3** Include all ten wildland management categories on the United Nations List of National Parks and Protected Areas.

**Activity 4.4** Provide for the establishment of *in situ* gene banks.

**Objective 5. TO PROMOTE THE LINKAGE BETWEEN PROTECTED AREA MANAGEMENT AND SUSTAINABLE DEVELOPMENT.**

**Activity 5.1** Develop and make available the tools for the survey of ecological processes, habitat requirements, and other components of protected area integrity to enable managers to critically examine the context for area conservation, and be able to associate conservation with development in adjacent lands.

**Activity 5.2** Work with governments and development assistance agencies to achieve the incorporation of protected area con-



siderations and support within development projects.

**Activity 5.3** Develop policy guidelines and legal instruments regarding the use of protected areas for research, environmental monitoring and the collection of scientific materials.

**Activity 5.4** Develop tools and guidelines for the practical incorporation of new objectives for protected area management of particular relevance to sustainable development, including environmental monitoring and genetic resources conservation.

**Activity 5.5** Investigate and utilize the traditional wisdom of communities affected by conservation measures, including implementation of joint management arrangements between protected area authorities and societies which have traditionally managed resources.

**Activity 5.6** Carry out research to determine ways to foster appropriate recreation and tourism in protected areas for which tourism has been deemed an objective, and to minimize the adverse impacts of such activities.

**Activity 5.7** Develop ways and means of promoting greater public support for protected areas.

## Objective 6. TO DEVELOP THE FULL CAPACITY TO MANAGE PROTECTED AREAS.

**Activity 6.1** Promote the establishment and recognition of protected area management as a professional career of vital relevance to society.

**Activity 6.2** Develop and promote training seminars, courses and workshops at the regional and local levels for protected area managers.

**Activity 6.3** Strengthen support to regional and national training schools.

**Activity 6.4** Promote the establishment of local, in-service training efforts for all personnel.

## Objective 7. TO DEVELOP ECONOMIC TOOLS FOR SUPPORTING PROTECTED AREAS.

**Activity 7.1** Develop and distribute tools for the analysis of values, tangible and non-tangible, monetary and non-monetary, associated with protected natural areas.

**Activity 7.2** Promote the quantification of values which relate conservation to development, specifically watershed protection but also including genetic resources, pollution control, soil formation, amelioration of climate, provision of recreation and tourism, and others of nature's services.

**Activity 7.3** Explore and publish concepts and tools which relate ecology and economics to promote a more consistent perspective for analyzing and explaining the role of protected areas in sustaining development.

## Objective 8. TO IMPLEMENT AN EFFECTIVE INVENTORY AND MONITORING SERVICE.

**Activity 8.1** Expand and develop the Protected Areas Data Unit (PADU) and related components of the IUCN Conservation Monitoring Center(CMC), to provide

information on protected areas, guide the determination of priorities, and support development agencies (both national and international) in relating the design of development projects to critical protected areas.

**Activity 8.2** Publish and distribute Realm-based directories and periodic reports to inform and support national and international organizations in their planning activities.

**Activity 8.3** Promote arrangements by international organizations, governments, and regional associations of nations for the long-term development and use of data collection systems, such as satellite remote sensing, covering all protected areas.

**Activity 8.4** Promote and implement methodology for implementing monitoring systems.

## Objective 9. TO IMPLEMENT INTERNATIONAL COOPERATION MECHANISMS.

**Activity 9.1** Integrate and strengthen ties between protected areas management and the Man and the Biosphere Programme, the Global Environmental Monitoring System, and the World Heritage Convention, to realize the full potential of these instruments for the common objectives of conservation and sustainable development.

**Activity 9.2** Encourage and advise all States on the preparation, use, and, where required, updating of international legal instruments which support protected areas.

**Activity 9.3** Explore and promote the development of tools and mechanisms for the fair sharing of costs and benefits associated with protected areas management, both among nations and between protected areas and adjacent communities.

**Activity 9.4** Explore the potential for new agreements and instruments needed to further strengthen international cooperation, particularly in relationship to genetic resources.

## Objective 10. TO DEVELOP AND IMPLEMENT A GLOBAL PROGRAMME TO SUPPORT PROTECTED AREA MANAGEMENT.

**Activity 10.1** Design and implement regional action programmes to ensure practical accomplishments close to the ground, taking into account relevant cultural and institutional diversity, and the necessary responsiveness to local needs.

**Activity 10.2** Provide technical and scientific guidance through the publication of a series of documents on practical subjects of global concern to protected area management such as those noted in the preceding items.

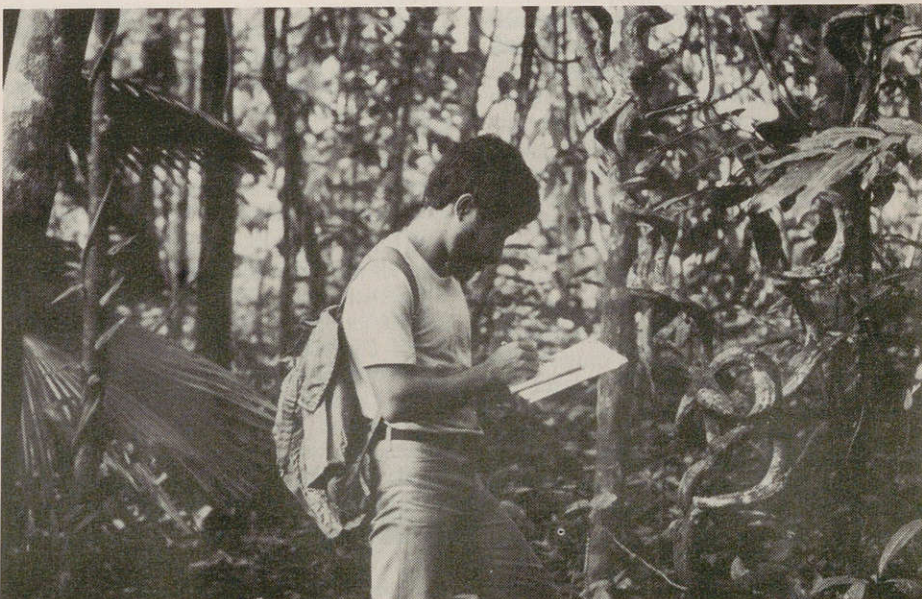
**Activity 10.3** Establish a communications network with the global community responsible for or supporting protected areas to ensure the flow of information and support the identity of the protected area profession.

**Activity 10.4** Build the institutional support necessary to carry out these activities as follow up from the Congress.

**Activity 10.5** Initiate steps for the celebration of the next World Congress on National Parks in 1992, with intermediate international, regional and national events designed to further the Bali Action Plan.

**Activity 10.6** Charge the IUCN to monitor the implementation of this Plan and to report on progress at the next Congress.

The **Bali Action Plan** is a revolutionary advance in linking the conservation of protected areas with social and economic development; no matter what the future may hold in store, it is apparent that the natural resources contained in protected areas are a sound investment. The ten objectives of the Bali Action Plan, if broadly supported by governments and conservation agencies and implemented together in a reasonably coherent way, can help ensure that protected area resources are conserved to form an inseparable part of the modern human heritage. □



*The Bali Action Plan aims to provide guidance and assistance to those agencies which are interested in improving their own management effectiveness in meeting the objectives for which their protected areas were established.*

Credit: Michèle Dépraz/WWF



# INSIDE IUCN

## WORLD CHARTER FOR NATURE

*The World Charter for Nature submitted to the 1982 UN General Assembly may not change the world but it reinforces conservation principles. Peter Jackson looks at the Charter and its significance in the international environmental context.*

Three years after the United Nations was founded in 1945, the General Assembly adopted the Universal Declaration of Human Rights to achieve international cooperation in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language or religion.

It has taken 34 years for the UN to equate a healthy natural environment with other human rights, and even then the World Charter for Nature, adopted on 28 October 1982, has gone largely unnoticed amid crises over armaments and international strife.

"Man is a part of nature and life depends on the uninterrupted functioning of natural systems which ensure the supply of energy and nutrients," the Charter declares.

"Civilisation is rooted in nature, which has shaped human culture and influenced all artistic and scientific achievement, and living in harmony with nature gives man his best opportunities for creativity, rest and recreation."

The Charter states that excessive consumption and misuse of natural resources, as well as failure to establish an appropriate economic order, leads to the breakdown of the economic, social and political framework of civilisation.

"Competition for scarce resources creates conflicts, whereas the conservation of nature and natural resources contributes to justice and maintenance of peace and cannot be achieved until mankind learns to live at peace with itself and foresees war and armaments."

Having stated that "Nature shall be respected and its essential processes shall not be disrupted," the Charter gives high priority to integrating nature conservation with social and economic development activities; to sustainable use of living resources; maintenance of soil productivity; restrained use of non-renewable resources; and control on use of technologies to minimise risks and adverse effects on nature.

It is by no means the only such document to prescribe principles for an ideal world. But since it deals with the very foundations of life on earth, the World Charter for Nature commands attention and deserves implementation to the best of every nation's and person's ability.

The Charter reflects the concerns of IUCN since its foundation in 1948, and so it was appropriate that IUCN's Commission on Environmental Policy, Law and Administration should have taken on the task of drafting it after the proposal was made by President Mobutu Sese-Seko of Zaire at the IUCN's General Assembly in Kinshasa in 1975.



*The World Charter for Nature calls for the conservation of man's natural heritage including many fragile ecosystems of which the Wadden Sea is an example.*

*Credit: foto rob de wina/Utrecht*

The first draft was presented to the UN General Assembly in 1980 and comments were reviewed by experts convened by the UN Environment Programme (UNEP) and IUCN. The final draft was submitted by Zaire and 35 co-sponsoring countries to the 1982 session of the UN General Assembly on 28 October. Although some countries, especially the United States of America, wanted further discussion of the terms of the Charter in order to reach a consensus, voting took place and 111 States were in favour.

The USA voted against the Charter, although it had been a sponsor of the first draft, and 18 nations abstained — Algeria, Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Ghana, Guyana, Lebanon, Mexico, Paraguay, Peru, Philippines, Surinam, Trinidad and Tobago, and Venezuela.

In a way action to achieve the aims of the Charter had already preceded it. The UN Conference on the Human Environment in Stockholm in 1972 marked the international community's recognition that problems existed and UNEP was established to tackle them. UNEP commissioned IUCN to prepare the World Conservation Strategy, which was launched in 1980. The World Charter for Nature reinforces the Strategy by serving as the basic declaration of high principles accepted by a large majority of the world's nations.

Those charged with economic development often see conservation of nature as a potential obstacle, and this view was reflected in the speech of the Brazilian delegate, on behalf of the eight Amazonian

nations who abstained in the voting, when he expressed disagreement with a number of clauses in the Charter and stressed the right of states to use their natural resources as they wished.

But the view is being increasingly accepted that conservation is integral to development if progress is to be sustained, and the Charter makes the point that long-term development plans must take due account of the capacity of natural systems to sustain populations and settlements.

The Charter stresses the importance of environmental impact studies of projects, which should only be implemented if the expected benefits outweigh potential damage to nature. It adds that the project should not go ahead if the potential adverse effects are not fully understood.

In the section dealing with implementation, the Charter gives high importance to conservation education, which, it says, should be an integral part of general education. This is one of the most important ways of promoting respect for nature in the long-term. However, it is of equal importance now to ensure that the Charter is publicised among political, business and social leaders, who are ultimately responsible for decisions affecting the natural foundations of life. Probably very few of them are aware of the existence of the Charter, or of the fact that their governments have subscribed to it.

The World Charter for Nature will not suddenly change the world. Nor did the Universal Declaration of Human Rights. But it is a major step forward to have conservation enshrined among the highest principles of the United Nations. □



## MAN AND SAND

*IUCN President, Professor Mohamed Kassas, looks at the problem of desertification and its links with the population factor. These comments are excerpts from an interview conducted by John Rowley of the International Planned Parenthood Federation.*

There have been some achievements since the UN Conference on Desertification five years ago, but not as many as we had hoped for, mainly because governments do not seem to be capable of making desertification control or reclamation of desertified land into national development priorities. Desertification control does not figure largely in applications for international aid.

I think this is related to what we call the economics of land development. Desertification control and reclamation have become a very expensive business. There is keen competition for investment funds, and the low returns on agricultural development in general and desertification control in particular, make them highly uncompetitive. Governments need to provide incentives and heavy subsidies for the process. This is where international aid can help.

There is a human element involved in the continuing problem of dry lands and the spread of deserts. Desertification arises through a breakdown in the relationship between man and land. There is a balance that needs to be maintained. Any upset leads to an upset of the system. Let me give two contrasting examples. In the Sudan desertification is very evident in what we

call the gum arabic belt. This is the area between the rainfall lines of 250 mm and 450-500 mm, which is the area of production of gum arabic, the second most important export crop in Sudan. (Sudan accounts for more than 80 per cent of the world production of gum arabic). In this area gum arabic is produced by a system of cyclical shifting cultivation, which is ecologically sound and has existed for millennia.

But over the last 50 years, it has been upset because of population pressure. There are too many people; too much demand. So the fallow years are becoming shorter, and the cultivation period longer. The system breaks down and the land loses its fertility and desertification results. This is an example of heavy population pressure overtaking the resource system.

In Yemen, on the other hand, cultivation is dependent on very intensive terracing of the highlands, which needs continuous labour-intensive maintenance. This system of cultivation has been maintained in Yemen for thousands of years, but at present, Yemeni labourers are finding it much more attractive to go and work in the oil-rich countries of Saudi Arabia and the Gulf, and hence there is a thinning of the population, shortage of labour, terraces are neglected, desertification comes in. This is an example in which the reduction of the population is causing the deterioration of the system because of the lack of labour necessary for work. These two contrasting examples show that we need to maintain a certain balance between population and resource development in these fragile systems of the arid lands.

Population increase takes place when nomadic people begin to settle. Let us look at what has happened in the northern states of Nigeria since the beginning of this century. There are two ethnic groups, the sedentary Hausa and the migratory Fulani, who carried out continuous tribal wars among themselves. Then as the wars finished, people began to settle and population started to increase. With population increase there are greater demands and the system begins to break down.

In another area, it is evident that the development of improved veterinary sciences and services and improved livestock breeds have led to an increase in the livestock population. In northern Nigeria between 1925 and 1965, the animal stock increased from 4 million to 10 million head, and at the same time the area available to grazing was becoming smaller because of the expansion of agriculture. Similarly, improved health services to the people are responsible for increases in human population.

The solution to the problem of rapid population growth is a combination of population planning and the integrated development of resources. For example, if you want to develop your livestock resources in arid zones, you must have a certain area with some irrigated pasture, using whatever water is available in little rivers or underground water resources. Then you have your livestock within the natural ranches, kept there within the carrying capacity of the system: in the appropriate number, for the appropriate length of time, and in the right type of season. For the rest of the year you move all your livestock with the people into a sedentary settled area of irrigated agriculture, with irrigated pasture. This is exactly what is happening now in Australia and the United States.

This system needs to be incorporated into national integrated development, and in many instances in Africa, for instance, this cannot be done within the political boundary of nations. There is a need to make the livestock industry transnational, and to use all the water that is available and really mobilize the whole region.

In this way you can increase carrying capacity and feed the people. So I think the answer is a combination between integrated development of resources on a large scale, including transboundary and transnational development of natural resources — and of course control of population. But you cannot control your population without social, cultural development, including, in particular in my thinking, the emancipation of women — emancipation of women meaning continuous participation of women in the system of production, because imported technologies in agriculture are tending to push women out of production.

When it comes to population planning, each nation should see to it that within its plans there is a target population. There must be a ceiling for every population which is worked towards. You can't let population increase infinitely without relating it to the resource base and to development plans. □

*Continued from page 35*

*environment, wise use of natural resources and the stabilization of human population are issues that are fundamentally inter-related", and the same theme is incorporated in the World Conservation Strategy).*

I should like to end this overview with one last word of praise for all those people who struggled to keep the Union alive during its first ten years. I would say that, above all else, they deserve credit for their perseverance.

Contributions, meagre even from the original member governments like Switzerland and Belgium, were slow in coming in, and subsidies from Unesco were earmarked in advance. Visions of bankruptcy and liquidation continually lurked on the horizon. Keeping the IUPN alive was in my opinion, the principal accomplishment of the pioneers following Fontainebleau. Lastly, I would like to add that disaster during those bleak years of budgetary problems could never have been avoided had it not been for a generous and indefatigable man who did his utmost to procure funds to keep the Secretariat afloat. Need I say that this kind man of genius was Harold Coolidge? Thanks again, Hal.

### The Union Today

The reader is fully aware of what the IUCN is today. For me, it also comprises what is implicit in the title of this article: a pioneer's reward.

In fact, nothing is more comforting to see today than what remarkable success the infant organization has made since it was first given its unpredictable task. The present unquestionably inspires the greatest confidence in the future.

It is in facing tomorrow that we must be wary. Nature and natural resources, particularly in the tropical regions of the Third World, are being plundered at an alarming rate. Those in political power who can fight the problem often turn a deaf ear. We need to act quickly and effectively if we are to prevent the depletion of these resources by the turn of the century. □

*Dr Jean-Paul Harroy was Secretary General of IUCN (then IUPN) from 1948 to 1955 and Chairman of CNPPA from 1966 to 1972. He is a Member of Honour of IUCN. He also served as Secretary General of the Institut pour la Recherche Scientifique en Afrique Centrale and 13 years as Director of the Institut des Parcs Nationaux du Congo Belge. He also was Governor of Rwanda Burundi. He lives in Brussels, Belgium.*



# INSIDE IUCN

## COMMISSION REPORTS

### COMMISSION ON ENVIRONMENTAL PLANNING

#### Project On Tribal and Indigenous People

Experience in development projects world-wide is showing that much more attention needs to be given to groups of people who are especially poor or deprived. In integrating conservation and development this focus may be critical since it is very often the environments of the poorest people which are most threatened. Perhaps the tribal and indigenous peoples, who have been defined by the World Bank as having stable, low energy, sustained yield economic systems make up the largest group of the poorest (estimated at between 200 and 300 million). They are "hunters and gatherers, shifting cultivators, herders, simple farmers or fisherfolk, tightly dependent on the local environment, and socially isolated from the national structures."\*

Recently the IUCN Commission on Environmental Planning (CEP) started a project concerned with tribal and indigenous peoples. The project originated as a follow-up to the recommendation of the 15th Session of the General Assembly of the IUCN in Christchurch, New Zealand, in 1981, which recognized the importance of traditional cultures in conservation and development. The conceptual base for the project was further developed at a meeting of the CEP in Morges in November 1982. Together with the Commission on National Parks and Protected Areas (CNPPA), the CEP has in preparation a volume with contributions by over 40 specialists on the theme of culture and conservation with much material on tribal and indigenous peoples.

During the remainder of this year further materials will be collected. Already over 500 tribal groups have been identified and a card index system started. This index will contain data particularly about the traditional environmental knowledge of the tribal peoples which is intended to be useful not only for agencies who seek to assist in environmental planning but also for the people themselves in their effort to help themselves. The Commission on Environmental Planning would like to hear from readers of the *Bulletin* who would be interested in helping in this important task or in suggesting names of persons who could help.

#### CEP Meetings

##### Expanded Steering Committee Meeting

The CEP Steering Committee, with invited additional members will be meeting in Coppet, Switzerland, near IUCN headquarters, 6-8 July. The Committee will focus upon on-going project activities as well as meeting arrangements for 1983 and future project collaboration with the United Nations Environment Programme for 1984-85.

### 1983 Commission Meeting

Plans are being finalized to hold CEP's annual meeting in two parts. During the last days of August the first part of the meeting will be in New Delhi to examine Indian efforts in implementing the World Conservation Strategy and to elaborate projects for the IUCN/WWF Plants Programme in India. The second part of the meeting will be in Stockholm in the first days of September to look at environmental planning issues of concern in Scandinavia.

### COMMISSION ON NATIONAL PARKS AND PROTECTED AREAS

#### 22nd Working Session of CNPPA Meets in Zimbabwe

Over 50 national parks experts from 28 countries met at the 22nd working session of CNPPA in Victoria Falls National Park, Zimbabwe, from 23 to 27 May. The participation from Africa was particularly strong, with some 18 countries representing all parts of the continent and demonstrating that protected area management has truly come of age in Africa.

The meeting was strongly oriented to produce results. These included: revised data sheets for the IUCN Directory of Afrotropical Protected Areas (planned for publication by end 1983); review of effectiveness of protected area coverage, based on the new Unesco vegetation map, leading to the preparation of a protected area systems plan for the Afrotropical Realm to highlight which habitats — terrestrial, freshwater, coastal, and marine — are in need of additional protection; review of major documents resulting from the Bali Congress, including 'Managing Coastal and Marine Protected Areas' (completed draft), 'Managing Protected Areas in the Tropics' (first draft), and the proceedings (final version for submission to publisher); an action plan for promoting the preparation of management plans for all Afrotropical protected area personnel; guidelines for dealing with large mammals in protected areas, designed for implementation by protected area managers; a programme for implementing the Bali Action Plan in the Afrotropical realm, including the establishment of priorities for funding and development of cooperative projects between countries (new cooperation between Angola, Mozambique, and Portugal was particularly important in this regard); review of three world heritage nominations from Zimbabwe: Mana Pools, Victoria Falls, and Matopos; and a review of the UNEP/IUCN project on East African Regional Seas, including suggestions for extending the approach more broadly throughout Africa.

The next Working Session of CNPPA will be held in Minsk, USSR, during the Biosphere Reserves Conference in September 1983.

### COMMISSION ON EDUCATION

The Steering Committee of the Commission held its annual meeting at Malvern

College, Malvern, U.K. from 28 to 31 March. The objectives of the meeting were to evaluate the present status and work of the Commission and to plan its future efforts. Reports by members of the Steering Committee and other participants were discussed. The meeting was attended by representatives of organizations concerned with the environment including the United Nations Environment Programme (UNEP), the World Confederation of the Teaching Profession (WCOTP), the United Nations Industrial Development Organization (UNIDO), the International Planned Parenthood Federation (IPPF), the Young Womens' Christian Association (YWCA), the International Youth Federation (IYF), the Elsa Wild Animal Appeal, and the Wildfowl Trust, U.K.

The Chairman of the Commission, Dr Albert V. Baez was nominated by the Executive Director of UNEP to be a member of an advisory panel of experts advising UNEP on environmental education and training.

The Executive Officer participated in the World Environmental Education Conference held from 5 to 8 April in Cairo, Egypt, and in the Congress of the Confederation of International Scientific and Technological Organizations for Development held from 11 to 15 April in Tunis. A book consisting of the papers presented at the Congress will be published. For more information please write to the Executive Secretary, Congress of the Confederation of International Scientific Technological Organizations at 51, Bld. Montmorency, F-75016 Paris, France.

The IUCN Education Commission US Committee/Mid Atlantic Region hosted members of the scientific and diplomatic community as well as members of the Environmental Attaches' Club from Washington, D.C. at a meeting on 18 May at the Chesapeake Bay Centre for Environmental Studies, Edgewater, Maryland. The meeting focused on international environmental organizations and the role played in them by IUCN, the Education Commission and the World Conservation Strategy. The meeting was held in collaboration with the Smithsonian Institution.

### COMMISSION ON ECOLOGY

#### COE Meetings in Lima, Peru

The Commission on Ecology (COE) met from 6-9 April in Lima, Peru, where it was hosted by the Universidad Nacional Agraria.

#### Symposium on Arid Lands of the Americas

In the framework of this meeting, on 7th April a symposium on Arid Lands in the Americas was organised by COE jointly with the Universidad Nacional Agraria. Eleven scientists from North, Central and South America and members of the Commission contributed. Among the subjects for discussion at the symposium were strategies for arid land development. At-

\* (World Bank, 1982, *Tribal Peoples and Economic Development*, Washington D.C. p.5.)



## COMMISSION REPORTS

tention was given to the problem of mangroves in arid zones and to rehabilitation of cloud forests in the coastal desert of Peru. A number of papers were presented dealing with the issue of arid lands in specific countries including: Argentina, Venezuela, Chile, Mexico and the USA. Dr C. Lopez Ocaña acted as moderator.

The Symposium was followed by a reception given by the Royal Netherlands Embassy.

### Spring Meeting

At the Commission on Ecology spring meeting 5-9 April, IUCN position statements on mangrove ecosystems and salt marshes were discussed. These were prepared by the COE working groups on Mangrove Ecosystems and Coastal Ecology.

The report on the Impact of Oil Pollution on Living Natural Resources prepared by Dr J. Baker with the COE working group on Oil Pollution has reached its final stage and is expected to be published in 1983.

An interim report on human population and natural resources was studied and participants welcomed the workshop planned on this subject in Oxford, U.K. 4-6 July. The workshop will be held in cooperation with the International Planned Parenthood Federation and endeavour to establish a position paper as well as an additional draft chapter to the **World Conservation Strategy** on population and natural resources.

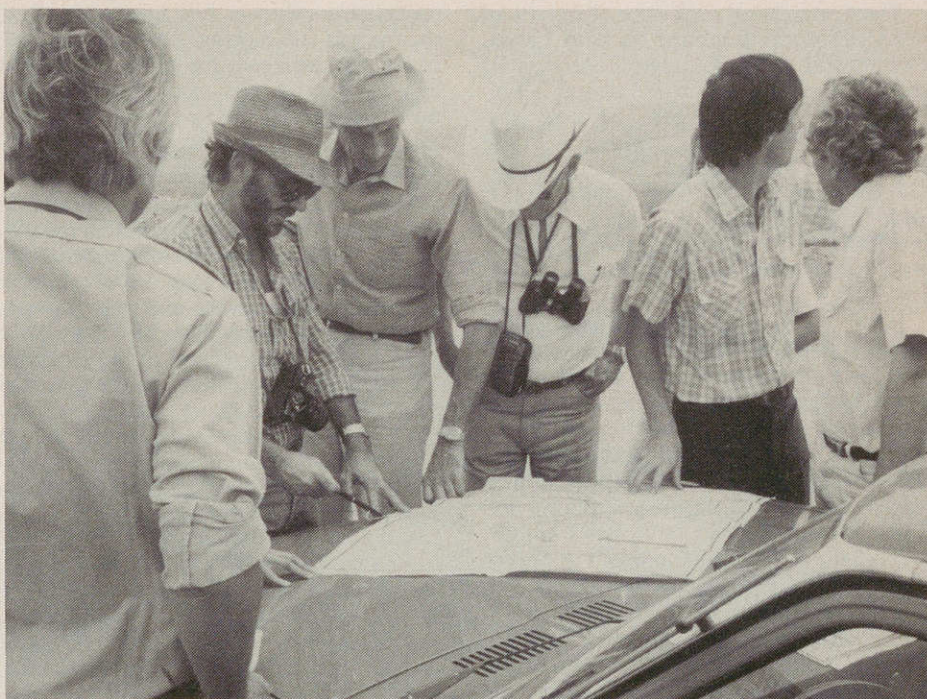
COE members at the Spring meeting congratulated Dr J. Davidson, Deputy Chairman of the COE working group on Tropical Rainforests and the participants in the workshop held in Bandung, October 1982, on the paper 'Economic use of the Tropical Moist Forests'. Publication was recommended.

Dr T. Antezana presented an outline for an IUCN position on Conservation of Antarctica. The draft paper will be further developed by the COE working group on Ocean Ecology.

The desirability of the developing of a Spanish language text book on conservation in Latin America was recognized and an outline of a plan for environmental education projects on tropical rainforests was considered based on a request by the IUCN Commission on Education.

At the meeting, Professor F.E. Wielgolaski presented a preliminary draft of an overview report on acid rain. The Commission resolved that the next version should go to COE membership for further comment. It also decided to establish a task force to develop a broad overview on the subject and to set up an international workshop devising a world strategy on acid rain.

The Commission considered and accepted a report of an ad hoc COE meeting that took place in Oxford, U.K. 12-14 January, which advised COE to publish a series of short papers on various ecosystems



*COE discussing the management of the Mejia Lagoons in the field in Peru*

Credit: Maarten Bijleveld



*COE meeting at the Universidad Nacional Agraria, Lima, Peru.*

Credit: Maarten Bijleveld

and the problems they face on the assumption that briefer presentations often more effectively convey the message to decision makers.

Another report considered was that of a meeting between COE and staff members of the Conservation Monitoring Centre

(CMC Kew/Cambridge) to identify opportunities for cooperation in the field of collecting and processing ecological data. The Commission was grateful for the efforts undertaken and welcomed the elaboration of a project for presentation at the Kuala Lumpur meeting in September.



# INSIDE IUCN

## COMMISSION REPORTS

The Commission took note of reports of the COE working groups on Arid Lands, Continental Seas, Ecological Aspects of Re-introductions, Environmental Pollutants, Inland Water Ecosystems, Mangrove Ecosystems, Mountain and River Basin Management, Ocean Ecology, Oil Pollution and Tropical Rainforests. It was informed that a meeting of the chairmen of the Marine working groups would take place in Godalming, U.K. on 26-27 May.

After the meeting Commission members went to Southern Peru at the request of the Peruvian authorities to give advice on the rehabilitation of the Coastal Lagoons of Mejia, one of the important stepping stones for migratory birds on the Eastern flyway. The Mejia Lagoons were drained unintentionally as a result of a development project. The Commission came to the conclusion that the situation could be remedied and provided the guidelines to do so in a report now available.

### Future Meetings

The next COE meeting will take place at Forest Research Institute, Kepong, Malaysia, 29 August-5 September 1983 and will include a workshop on degraded lands once under tropical rainforests and a Symposium on the future of tropical rainforests in South East Asia. It was agreed to hold the Spring 1984 meeting at the East West Center, Hawaii from 6-14 April.

### SPECIES SURVIVAL COMMISSION

#### SSC Meets in Zimbabwe

With Richard Fitter sitting in for Chairman Gren Lucas, and with the kind assistance of the Department of National Parks and Wildlife Management, the 59th Meeting of the Species Survival Commission (SSC) was convened in Harare, Zimbabwe, 14-16 April. A full day meeting of the SSC African Elephant and Rhino Specialist Group was also held on 17 April, with Group Vice Chairman Richard Bell presiding.

About 60 registered participants were welcomed to Zimbabwe by the Honorable Victoria Chitepo, Minister of Natural Resources and Tourism, who also graciously invited the participants to a social event on the evening of the opening day. In her opening remarks, the Minister emphasized that the Zimbabwe Government takes very seriously its responsibility to preserve the full range of plant and animal species indigenous to Zimbabwe — not only for their intrinsic value and because "they are an integral part of our heritage", but also in recognition of the need to preserve the full range of genetic diversity as an insurance for the future. She was also "particularly pleased" that a session of the meeting was devoted to "the all important question of the conservation of plants and plant communities in this region."

The Minister commented that preserving all indigenous species was an awesome task,

particularly when a full inventory of all species was still lacking, but reported that, of the mammals only the native white rhino had been extirpated—and this had since been successfully reintroduced. She considered the wild dog to be the most endangered mammal species at present.

In a preview of a theme that emerged in several later sessions, the Minister reminded the meeting that the controlled legal utilization of species can be a powerful force for conservation, and that this was nowhere more clearly illustrated than in the recovery and management of the crocodile populations in Zimbabwe. In the minds of rural folk in the country, the animal now has a value, a monetary value, and people would rather problem animals were captured and removed than see them destroyed. Unless an animal is valued, whether it be aesthetically or directly in terms of potential revenue, it can so easily become a nuisance, she said. Although the survival of some species in national parks or other protected areas may be reasonably secure, the survival of species in healthy, viable populations country-wide depends on the landholder. If he regards them favourably, for whatever reason, he is likely to save them. It is the man on the land who makes the final decision about destroying the last members of a species.

Another aspect of economic factors affecting wildlife was examined in a series of reports on the effects of veterinary fences in Botswana and Zimbabwe. Douglas Williamson reported on the situation in Botswana where hundreds of miles of fences have been erected to control the movements of wildlife as a means of preventing the spread of hoof and mouth disease, among other reasons.

The impacts on wildlife have been serious through interference with natural seasonal movements and the denial of access to water. The fences apparently play a role in Botswana's ability to certify to the European Economic Community that large areas of the country are free of hoof and mouth disease, thus allowing shipments of livestock products to the EEC to be approved for entry. Since the EEC is the major market, and the export of livestock products one of Botswana's major economic activities, the situation poses a real dilemma in land use and conservation. The real and potential values of Botswana's native wildlife seem not to be adequately appreciated in the present scheme of things. Other aspects of the use of fences in Zimbabwe were reported by Dr J. Condy and by R. Taylor and R. Martin.

An entire morning of the meeting was devoted to reports and discussions on plant conservation problems, particularly in southern Africa. Sara Oldfield of the Threatened Plants Committee Secretariat at Kew reported on work underway, especially by the Threatened Plants Unit (TPU) of the Conservation Monitoring Centre (CMC). Dr A.V. Hall of the Bolus

Herbarium in Cape Town reported on the uniqueness of the Cape flora and on its uniquely endangered status, together with the activities under way to increase public awareness and support for plant conservation. Dr T. Muller, Head of the Government Herbarium and Botanic Garden in Harare described efforts under way in Zimbabwe, and called for more integration of plant conservation needs in regional and local land use planning. Problems in controlling the trade in plants were reviewed by L. McMahan of TRAFFIC (US).

Another morning session continued the examination of problems arising in the use and misuse of various endangered categories for species status designations. These were first explored in a symposium at the 58th SSC Meeting in Kuala Lumpur. The reports prepared for these two sessions shed light on the greater legal and other implications now being attached world-wide to terms such as "endangered" and "threatened". The Commission, with the help of the CMC, is continuing its inquiry into this matter in the expectation that useful policy guidance can be developed on this widespread and growing problem.

Other highlights of the meeting included reports of progress in the new TRAFFIC regional office in Japan by Hideo Obara and Tom Milliken, and in the US office by Linda McMahan. A report on conservation progress in China was given by Commission Member Professor Wang Sung (accompanied by a film, with narrative in English, on the Chinese Alligator), and Sr José L. Tello presented an interesting and detailed report on the development of the Zambesi Delta Wildlife Utilization Area in Mozambique. A further afternoon session also reviewed issues to be considered at the CITES meeting which was convened in Gaborone the following week (see page 1).

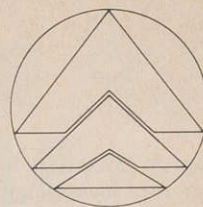
### SSC Steering Committee Meets

A special meeting of the SSC Steering Committee will be held in Gainesville, Florida, 16-18 June, to give in depth consideration to new programme directions for the Commission.

Negotiations are under way with Czechoslovakian authorities for approval to hold the 60th SSC meeting in that country in the fall. The East European Committee on Environmental Education of the IUCN Commission on Education, has offered to coordinate the meeting with the help of other IUCN members. The tentative schedule would convene the meeting for opening ceremonies in Prague on 4 October, with the participants travelling from there to the Krokonoše National Park by special bus for the balance of the working sessions and field trips through 7 October. A special effort will be made to encourage participation by East European members and cooperators who might otherwise not have the opportunity to meet with SSC. The agenda will include topics of special interest to the region. □



# WORLD CONSERVATION STRATEGY IN ACTION



One of the key priorities highlighted in the World Conservation Strategy is the need for the preparation and implementation of national and/or sub-national conservation strategies (NCS). The development of such strategies is seen as a vital part of the planning process of any country — a process for guiding the country in achieving sustainable development and maintaining the essential life-support systems.

This supplement to the IUCN Bulletin is produced to provide information on the WCS in action and on the status of national conservation strategies throughout the world. In addition to news from around the world, the present issue looks at three specific aspects of NCSs: the cultural dimension, the urban fringe, and the foreign policy aspects of NCSs in industrialised countries. It is hoped that these articles, based on the

NCS experience of their authors, will act as thought-provokers for others involved in strategy development work.

As usual, the news contained in this supplement is only as accurate and complete as the information we are given. This issue is based on information received before May 1983, and we would like to receive new information for the next issue before 1 August 1983.

## WHAT IS AN NCS?

By Dr David Munro, who was IUCN's Director General during the time that the World Conservation Strategy was developed and is now Senior Adviser to the Conservation for Development Centre and Member of the Environmental Planning Commission.

When the World Conservation Strategy (WCS) was launched in March 1980, it was acclaimed as a new and meaningful contribution to planning the world's development. The WCS defined what should be done so that living resources are conserved, and development thereby made sustainable. Because it addresses conservation and development at the global level, the WCS provides no more than principles and guidelines for the sorts of actions that should be taken by countries (or by the states or provinces within them). But if the WCS is to be implemented, each country must develop a national conservation strategy (NCS), following the principles and adapting the guidelines set forth in the WCS.

A strategy is a plan for action. An NCS is a plan for conservation action within a country, for action that will safeguard its patrimony and make it possible for the benefits of development to be enjoyed by succeeding generations. The preparation of an NCS identifies and assesses conservation and development problems, and it leads to the definition of what should be done about them.

Let us look at one simplified but far from simple example, hypothetical in detail but real enough in its generality, of the sort of problem that an NCS would deal with.

Consider an equatorial country once largely covered by humid tropical forest. If the present rate of timber cutting is continued, the nation will lose all such forests in ten years. That loss will entail perhaps ten tree species well known to be highly valuable as sources of fine wood, structural timber, useful fibres and resins, etc. Six species yielding products used by local people for building traditional shelters, canoes, baskets, ropes, mats, etc. will also be lost. Another six species bearing edible fruits or



A strategic approach to the use of a nation's tropical forests is necessary if piecemeal destruction is to be avoided. Careful evaluation of the costs and benefits of each development alternative is essential if the needs of the people are to be satisfied on a sustainable basis.

Credit: MJC

nuts, and four species — the saps or leaves of which are the sources of traditional medicines or provide the basis for modern equivalents — will disappear. And finally, some 50 other little-known species of trees or shrubs of no immediate use will fail to survive.

When the forest disappears, with it will go the habitat of some 200 species of birds, 40 mammals, 20 reptiles and amphibians and a much larger but indeterminate number of insects, arachnids, worms, herbaceous plants, fungi and micro-organisms. All of these will be lost to the nation and some to the world as a whole.

In areas where similar forests have already been removed, the soils are frail, infertile and totally unsuitable for sustainable







agriculture. They have produced only three or four increasingly poor crops of cassava or maize since the forest trees were cut and the remaining undergrowth slashed and burned. The soils bake hard as brick in the evermore frequent periods of drought, and become seas of mud in times of heavy rain.

The annual variations in rates of flow of the streams draining the formerly forested area are greater by several orders of magnitude than they were while the forest still stood — their muddy waters failing to yield the quantity and variety of fish that once provided sustenance and pleasure to the inhabitants of 100 or more riparian villages.

Farther downstream on the main river of the region, an increasing rate of siltation in the reservoir behind the hydro-electric dam is cutting the useful life of the dam in half, threatening the continuity of energy supplies to the metropolis, with its new industries and ever-growing population of refugees from the unproductive countryside.

The limited plantations of a single species, most commonly eucalyptus, while yielding a badly needed but insufficient supply of fuel wood and a small harvest of poles and planks, support only a handful of the other plants and animals that once existed in the region.

Having established the consequences of forest loss, as far as possible in quantitative terms, the NCS would describe the priority actions necessary to conserve the tropical forest. These would include complete preservation of some areas, selective exploitation of others, using methods least damaging to the environment, and reforestation in a manner that would create a mosaic of species in an area having at least some of the characteristics of the original forest.

Determining the approximate mix of priority conservation actions would involve considerations of practical feasibility and cost and of the long term benefits to be sought. Among them would be not only positive benefits, such as the opportunity for selective cutting of valuable trees for many years and the preservation of other important wild species, but also the benefit of not having to pay the many economic and social costs of forest destruction outlined above.

Conservation and development are indeed inextricably inter-related. Many factors condition the style and pace of development — the aspirations of the people, the ways in which societies are structured and how they operate, global patterns and conditions of trade and commerce, and the availability of information and technology are all important — but the ultimate limiting factors are those upon which life itself depends. These are effectively functioning ecological processes and life-support systems, and the continuing availability of living resources.

The aim of an NCS is thus to secure realistic and lasting development, to help people now and in the future to meet at least their basic material and cultural needs, and to improve the quality of their lives. An NCS goes to the heart of a country's

development problems by focussing on the wise management of living resources and the quality of the environment.

Unless resources are used so that their benefits can be enjoyed just as much in the future as at present, and unless the environment remains healthy and productive, the capacity of a nation to meet the needs of its people will progressively diminish. A nation that is careless in its use of living resources will risk losing its independence, because it will need to rely increasingly on help from other nations — so long as the other nations can provide it.

The objectives of an NCS are the same as those of the WCS, but action to meet them must be worked out within the conditions imposed by the distinctive ecological and socio-economic characteristics of each country. The objectives are to maintain essential ecological processes and life support systems, to preserve genetic diversity and to ensure the sustainable use of living resources.

In Nepal, where work on an NCS is well underway, the Government wishes to make the broad aim more explicit by adding another objective, namely "to satisfy the basic material, spiritual and cultural needs of all the people of Nepal, both present and future generations."

Formulating an NCS is a complex process of review, analysis and judgement. The review must be exhaustive, taking into account the physical characteristics of the country, including, of course, the characteristics of its natural and modified ecosystems. It must also take account of the numbers, activities and distribution of its people, of the goals, tools and methods of development, and thus of the ways in which people use and manage the ecosystems of which they are a part. Information on settlements, on the transportation, transmission and communication systems that link them, and on traditional and cultural characteristics that relate to life styles, levels of consumption, aspirations and attitudes, is also essential. And, of course, it is necessary to consider how the nation manages its affairs — to know what laws, organizations and procedures affect the ways in which development proceeds and the environment is managed.

With all these facts assembled and having in mind the goals of all activities required for conservation on the one hand, and the stated goals and observed patterns of development on the other, the interactions between conservation and development can be analysed. The example of the humid tropical forest given above suggests some of the factors which must be considered in such an analysis.

Analysis of conservation/development interactions is one of the most important elements in the formulation of an NCS. It leads to a more thorough understanding of existing problems; it enables the emergence of problems hitherto unforeseen to be forecast.

The analysis must be complete. It must consider all the measures that are necessary to achieve conservation — to maintain the fertility of soils, the safety for life of air and water, the survival of species and the

sustainable productivity of exploited ecosystems and species.

It must cover all parts of the country — its croplands, rangelands, forests, savannas, mountains, and coastal zones. It must consider basic human needs. It must assess the effects on conservation of all actions, planned for the future or underway, to produce food and materials for clothing and shelter, for manufacturing and processing, to provide energy, to dispose of wastes, to build and maintain cities and villages, and to provide transportation for goods and people, and communication.

When all conservation/development interactions have been analysed, and when their significance, urgency and possible irreversibility have been established, priority actions to ensure conservation can be defined. It may then become clear that if development is to provide long term benefits, conservation will require a higher rate of investment and the financial returns of development may be reduced in the shorter term.

At this stage, not necessarily as part of the process of formulating the NCS but to clarify the policies that will condition the conclusions of the strategy, governments may wish to review their development goals and plans. They may wish to reassess the costs and benefits of building and maintaining settlements with water supplies and waste disposal systems, of building schools and training and hiring teachers, of constructing and maintaining roads and airports, of erecting and furnishing public buildings, of importing goods and commodities that the nations do not or cannot produce, of equipping and maintaining military forces, and of investing in developments expected to yield additional revenue.

Governments may conclude that a higher rate of investment in conservation just cannot be managed if development is to proceed as had been planned. But having analysed the catastrophic consequences of failure to conserve, they may also conclude that they cannot afford not to invest in conservation.

Faced with such a dilemma, a government must explore two sets of questions. Among the first set are the following: How can the nation continue to derive benefits from its living resources without eventually destroying them? What would be the effects on income, employment, population distribution, etc., now and at various times in the future, of different levels of resource exploitation, ranging from exploitation that consumes a resource quickly at one extreme to virtual preservation at the other? Are there economically and ecologically acceptable techniques for intermediate levels of exploitation? Can we replace natural ecosystems that have been destroyed with ecosystems that have some of the most important characteristics of their predecessors, and at what costs?

The second set of questions relates to development priorities and include the following: Do the planned development investments and continued expenditures meet

*Continued on page 51*





# CONSERVATION FOR SUSTAINABLE DEVELOPMENT IN BELIZE

*A first IUCN mission to Belize has taken place. A draft report has been produced, summarising the environmental situation of the country and proposing an outline for the strategy development work. Dr Pierre Hunkeler, who led the IUCN team in Belize, summarises here the outcome of the mission and the effects a Belizean national conservation strategy can have.*

Newly independent\* and with an economy largely based on the exploitation of natural living resources, Belize has to choose the development options which have the best chances of satisfying the needs of the Belizeans and promoting their well-being. In addition, the Government has to ensure that future options of possible great benefit will not be limited by decisions made today on the basis of short term returns.

The Government has recognised the potential offered by the principles of the World Conservation Strategy to help in this task. Thus, following discussions with IUCN's regional officer, Bernardo Zentilli, the Ministry of Natural Resources requested the assistance of the Union to develop a national conservation strategy for the country.

A firm foundation for the strategy was established in November-December 1982 during a visit to Belize by an IUCN team, supported by the United Nations Environment Programme, World Wildlife Fund, the U.S. Agency for International Development, and the New York Zoological Society. The need for and objectives of a national strategy were discussed with a number of government officials from practically all ministries, as well as with representatives of interested public and private organizations.

A two-day workshop was set up for the mission, which provided a good forum for an intensive review of the present status of natural resource use in the country, of the most pressing conservation needs, and of the contribution of conservation to development.

From these meetings and discussions, the IUCN mission drew up a report, which is now in the hands of the Government of Belize for consideration. IUCN has expressed its willingness to help in the follow-up of the report, in order to assist in the preparation of the strategy itself and its implementation.

The initiative to develop a strategy is most timely, as Belize is still in the fortunate situation of having wisely managed its natural resources, with limited cases of over-exploitation or degradation. It is no coincidence that Belize, with its largely intact environment, is the only country in the region which can actively welcome refugees

from places where deforestation and erosion have left people without basic means of survival.

Despite its relatively small size (22,965 sq. km), Belize is endowed with rich and varied natural resources. For example, the coast is dotted with small islands (cays) and protected by the largest barrier reef in the Northern Hemisphere. There are extensive tracts of mangroves, pine savanna and forests, various types of tropical forests, and inland lagoons, which provide excellent habitats for a multitude of wildlife species, such as the jaguar, the manatee and the Morelet's crocodile, which are severely threatened elsewhere.

Yet, being in the early stages of development, Belize needs a plan for the wise use of its natural resources. A national conservation strategy can help in many ways to promote a style of development respectful of natural values, by providing the necessary conservation input into the development planning process.

At present, numerous development proposals from public and private international sources are evaluated in economic terms, with limited consideration given to their demands on Belize's natural resources. Thus, the establishment of a Conservation Strategy Task Force has been recommended to complement, on the conservation side, the work of the Government Task Force on Development.

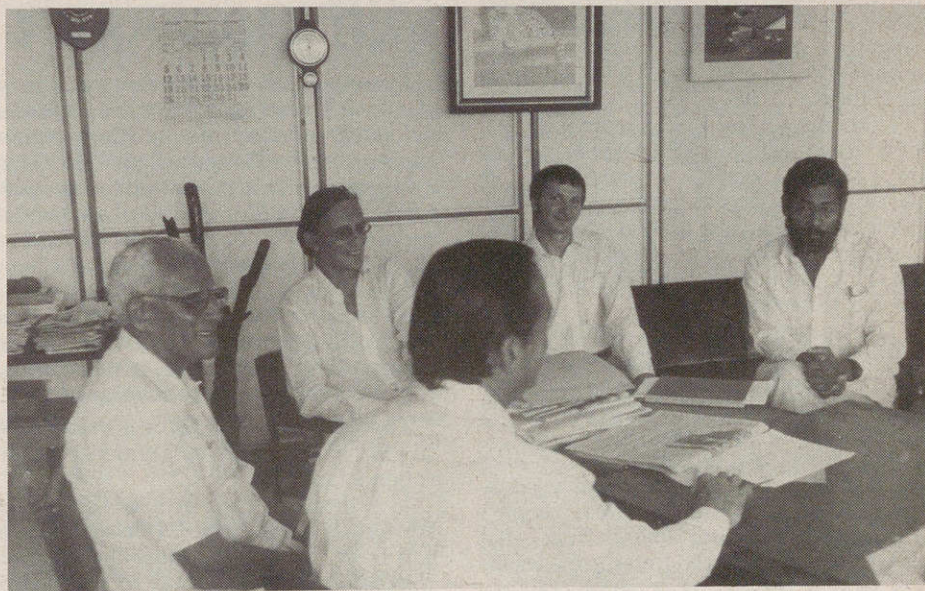
A strategy can help harmonising the activities of the different sectors and ministries that affect living resources. For example, tourism development on the coast or cays should not result in extensive land-reclamation or mangrove destruction, which will severely affect nursery grounds

for fisheries. The thriving fishing industry is the only industry that is wholly owned and operated by Belizeans.

The strategy can also contribute to the promotion of Belizean national consciousness and identity, by fostering knowledge and appreciation of the diversity, value and uniqueness of the country's natural resources. It can indicate priorities for action, identify key areas for protection, and point out projects which can have highly negative environmental impacts (such as a proposal to produce most of the electricity of the country from a wood chip burning plant).

Even though excellent opportunities for conservation exist, constraints should not be ignored. With a total population of some 150,000 inhabitants and a high emigration rate, the availability of manpower is limited and outside assistance to help the over-burdened local professionals in the preparation of a strategy will certainly be required. Finance is another problem to be solved. In addition, natural disasters (flooding, hurricanes and catastrophic storms) are part of the history of the country, and plans have to take them into account. Even assuring the protection of existing natural barriers (reefs, mangroves) against them is an important part of any conservation proposal.

But with the enthusiasm and dedication shown by Belizeans, especially the younger generation, for the preservation of the country's heritage (natural and cultural — remember that Belize was a very important Mayan centre), there is good hope that conservation will indeed receive the consideration it deserves for the long term benefit of the country. □



*Discussing the national conservation strategy for Belize: The Right Honourable George Price, Prime Minister (centre), with (from left to right) James Waight (President of Belize Audubon Society), Cyril de Klemm, Pierre Hunkeler and Merilio Morell (IUCN).*

\* Belize gained independence on 21 September 1981.





# CULTURE AND THE WORLD CONSERVATION STRATEGY: A CASE OF THE DOG IN THE NIGHT?

*Is the cultural factor in the World Conservation Strategy a case of the dog in the night? Fans of Sherlock Holmes will recall the story of Silver Blaze where what was significant was what did not happen — the fact that the dog did not bark in the night. Dr David Pitt, a consultant to and member of the Commission on Environmental Planning of IUCN, has studied the cultural factor and its omission in the WCS and in various national conservation strategies.*

Looking over the reception which the World Conservation Strategy has received, it seems that a number of criticisms focus on what is *not* in rather than what is in the Strategy.

Of all the missing elements, what have been loosely called cultural factors seem to have been most often noticed, especially in developing countries.

A commentator\* wrote that "One of the basic concerns of Third World people is that they feel culturally threatened. Only when strategies are seen to respect and promote traditional cultures and cultural property will they motivate the people of the Third World into conservation of environmental and natural resources."

This sort of comment need not be confined to developing countries. The UK's series, "Earth's Survival: A Conservation and Development Programme for the UK", points out that each country has its own "cultural" approach and that the World Conservation Strategy contains an "extraordinary omission" in saying nothing directly about such matters as ethical values which lie at the heart of such national cultural approaches.

We are now at a time when 34 countries have endorsed the WCS, and some 15 countries are developing their own national strategies. How is culture handled then? In order to answer this question, it is necessary to be clear about what we mean by culture.

There are several rather general usages. First there is culture (in the singular) as a set of ideas, whether pragmatic or philosophical, held by quite ordinary people about society in general and the environment in particular. Often these ideas are expressed in what is called cultural life, notably in the arts.

The second important definition is cultures (in the plural), the groups of people (often called sub-cultures) which exist within national boundaries and which share common cultural characteristics.

The importance of culture and cultures in the process of conservation and development cannot be overemphasized; people's actions and reactions follow from what they think. The cultural frame provides the key to how people use or abuse their environment and why strictly economic or

management criteria imposed from above may become irrelevant and the best laid plans fail.

Another important point to notice about both culture and cultures is their holistic nature. Ideas about the environment are closely related to population (another element missing in the WCS, according to some critics) as well as the whole range of development sectors. Action and research on the cultural context is then by nature inter-sectoral and inter-disciplinary.

Finally, culture and cultures tend to exist and persist to the extent that there is an effective communications system, both internally and externally. This is why the media and the current telecommunications revolution may be of paramount importance in conservation strategies.

National strategies generally still have a long way to go in appreciating the importance of the cultural context. But there are some hopeful signs. For example, the UK strategy is quite unique in having a whole volume concerned with environmental ethics and conservation action, and the New Zealand proposal has a chapter on what it calls 'non-material' needs. Yet, neither talks very much about the multi-cultural societies which make up those nations.

The Italian strategy also has a section on cultural aspects and talks in a refreshing way about a new mentality and new cultural attitudes being necessary for conservation and development, especially working through non-governmental

organizations which may reflect cultural heterogeneity more than government departments do.

There is certainly some acknowledgement of the need for people from different cultures to participate in the conservation and environmental planning process. For example, in the Canadian plan, "World Conservation Strategy: A Federal Review", Priority National Action 13 points to participation involving Canadian tribal and indigenous peoples.

The cultural dimension has been even less apparent in the strategies from developing countries. Some (e.g. Malaysia) are conscious of sub-national differences, but these do not necessarily reflect the sub-cultural pattern, even when the dominant dynamic is ethnic (e.g. in the Fiji Plan).

An exception may be Nepal where the Prospectus has adopted a very significant additional objective, to 'satisfy the basic material, spiritual and cultural needs of all the people, both present and future generations'. The Nepalese aims are significant not just for recognising the importance of cultural aspects, but the future dimension as well, and the young people of today who are the future.

It may well be that the so-called youth-culture is the single most important factor where attempts at education, communication, mobilisation and participation, if not grass-root action, must start. Certainly, national strategies which overlook the cultural dimension may be faced with major problems in instilling the conservation ethic into the hearts of the people. □

## EQUILIBRIUM BETWEEN TRADITION AND MODERNITY

*By taking into consideration the cultural aspect, a fourth objective has been added to those of the World Conservation Strategy in the Prospectus for the Nepal Conservation Strategy: Satisfy the basic material, spiritual and cultural needs of all people of Nepal, both present and future generations. Dr Corneille Jest, of Centre National de la Recherche Scientifique in Paris, France, has been working with the IUCN/CDC team in Nepal, and reports here on the importance of considering Nepal's culture in the national strategy.*

The kingdom of Nepal is in many ways an ideal place to develop a national conservation strategy.

It is located in the central part of the Himalayan range, isolated between China and India, its territory extending from the tropical zone in the Terai to the highest peaks of the mighty Himalaya.

Its ecological richness is immense, having, for example, more than 9,000 species of plants and 900 species of birds.

When one considers the north-south cross section of the Himalaya, one is conscious of the variety of habitats, the agro-pastoral activities ranging from rice cultivation in the Terai to purely pastoral yak and sheep breeding in the mountains. The landscape is in itself an expression of its particular culture.

Nepal has maintained many important aspects in its cultural diversity partly due to the different origins of its people: the Indo-Nepalese castes, the Tibeto-Burman speaking groups of the Upper Hills, and the inhabitants with a Tibetan background of the High Valleys.

The country is also unique in that Buddhism and Hinduism meet and have developed a specific culture in the Kathmandu Valley. Pilgrimages, an expression of the religious beliefs (and the starting point of national tourism), have promoted the protection of landscapes, mountains, lakes and rivers.

Among the major factors which affect the country's daily life and its future are

*Continued next page*

\* *New Scientist*, 14 August 1980 (Vol. 87, No. 1214), p. 540.





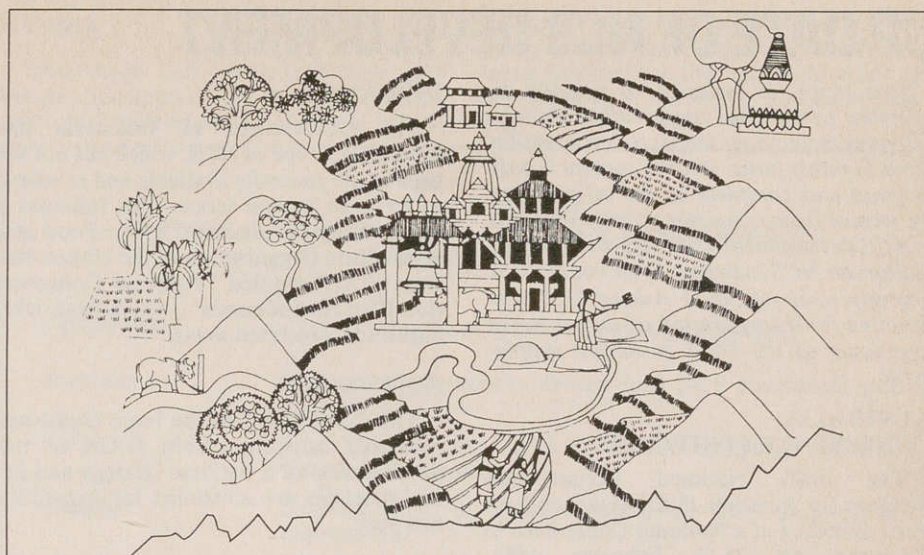
## Equilibrium... continued

population growth and foreign influence such as tourism and modern technology.

Population growth, resulting from the improvement of health, has affected the environment and due to this fact certain regions already see their ecology and economy being drastically changed. Such is the case in the Terai where forests are being replaced by agricultural land.

Nepal has been opened to foreign influence and to tourism since 1951. Together with good results there are also severe threats to the natural and cultural resources. Development brings new fashions, threatening the traditions and, at worst, the destruction of landscapes and cultural sites by uncontrolled industrial growth and urbanisation.

This brings us to underline the problems that must be solved in the field of conservation and promotion of the natural and cultural heritage. The behaviour of men, imbued with Buddhist and Hindu philosophy, the limitations imposed by an exceptional ecological milieu and the priorities to be respected in a developing country, narrow down the choice of operations. Moreover, it is an accepted principle



*Cultural considerations — central to achievement of sustainable development in Nepal.*

Credit: Christine Bass

that conservation should never become an obstacle in the struggle for better living conditions.

In attaining the goal of a nation-wide conservation strategy in a country like Nepal, it would be difficult to establish an

equilibrium between tradition and modernity while taking into account the necessary development of a country whose richness only lies in its natural resources and the will of its inhabitants to preserve a pristine environment. □

## Continued from page 48

basic human needs? If basic human needs are not being met, can investments or expenditures for other purposes be diverted to meet them? In short, can priorities be changed? If basic human needs are already being met, are additional development costs aimed at sustainable development — at development that does not degrade the environment?

The decisions reached as a result of considering these two sets of questions and others related to them will establish the framework within which the conclusions of an NCS must be defined.

The conclusions of an NCS should not be limited to those concerned with "on the ground" priority actions. An NCS should also review and make recommendations with respect to organizations, procedures and laws that have a bearing on conservation.

National and regional processes for economic planning and for physical planning should also be subject to review; the concept of ecosystem evaluation, as outlined in the WCS, and environmental planning should become integrated parts of the broader planning systems.

The importance of education, both formal and informal, that conveys an understanding of environmental management has been stressed many times. An NCS should recommend the steps necessary to ensure that environmental education is effective.

Another result of the analysis of conservation/development interactions will be a pin-pointing of subjects on which basic information is lacking. Thus, priorities for conservation-oriented research can be established.

Finally, bearing in mind that no nation is

an isolated entity, the international implications of conservation/development problems need to be considered throughout. The migratory habits of many species of animals, the flows of important rivers from one nation to another, and the fact that several nations may share the shores of a regional sea, attest to the importance of international cooperation in conservation.

An NCS is not simply a matter of technical design of systems for exploiting living resources within a conservation framework, or of implementing procedures for regional planning that take resource and environmental considerations into account. It should be thought of as conceptually, if not physically, integrated with the national development plan.

Preparing an NCS is likely to raise policy issues of the highest order. Implementing an NCS will affect the lives of all the nation's people — for the better in the long term, although short-term sacrifices may sometimes be required. The process of preparing an NCS is therefore as important as the product.

The process of formulating an NCS and the possible nature of its consequences should be understood and accepted by the nation's leaders at the outset. There is no point in preparing an NCS for window dressing. Governments should be ready to modify development priorities and methods if the strategy reveals that development will not otherwise last.

Designing a conservation programme is necessarily an inter-disciplinary process and therefore the team that reviews and analyses the basic information must include, at least from time to time, not only ecologists, agronomists, foresters, engineers and other specialists in the physical sciences, but also economists,

sociologists, planners and administrators. Preparation of an NCS must be carried out in close contact with whatever body has a key role in establishing the nation's priorities and in planning the means by which they are to be met.

The small core group of experts responsible for managing the accumulation and analysis of information should meet regularly with the planners and policy makers who are concerned with all aspects of the nation's economy and development, to exchange information and enlarge each other's understanding. The involvement of the public is also of major importance. Thus, arrangements should be made to inform and consult citizens and public interest groups: professionals have no monopoly on wisdom.

The final chapter of an NCS should summarise the recommendations for action contained in earlier sections. The actions recommended should be presented in a programmatic form, with estimates of their costs, indicators of organisational responsibility, and schedules for their accomplishment. The form of presentation should be such that component project proposals can readily be extracted from the programme as a whole.

Though the objectives and principles of the WCS are universally valid, the process of preparing an NCS and the resulting product are unlikely to be the same in any two countries. In every country, work on an NCS will call for building a competent and dedicated team, primarily of residents, but sometimes including experts from other countries.

In no country will the preparation of an NCS be simple or easy. In every country, those who work on an NCS will be rewarded by knowing they have made an essential contribution to the country's future. □





## UP-DATE OF NCS DEVELOPMENT

*This report is intended to provide an overview of national conservation strategy activities throughout the world on a regular three-monthly basis. But the content is only as good and complete as the information we receive from countries actively involved in NCS development work. Up-dated information on NCS activities in all countries is urgently requested by 1 August 1983, the deadline for incorporation of data into the next issue of the WCS in Action supplement.*

### AUSTRALIA: CONFERENCE POSTPONED

The draft National Conservation Strategy for Australia (NCSA) was to have been discussed at a National Conference in Canberra on 25-28 February 1983. However, due to the calling of a federal election on 5 March, the Conference was postponed until 10-13 June 1983.

The direction of further development of the strategy will become clearer after the conference. The new Australian Labor Government, however, has stated as part of its Environment Policy that it will "implement in co-operation with the States and Territories, a National Conservation Strategy to protect Australia's renewable natural resources".

### BELIZE

Following the IUCN mission to Belize in December 1982, a draft report has now been completed and submitted to the Government.

### CANADA

The assignment of responsibility for implementing the WCS throughout the Federal Government of Canada has been analysed and summarised in a report by the *Department of Environment*. Overall coordination for implementation has been assigned to the *Environmental Conservation Service*, and the Policy and Program Development Directorate will keep track of the implementation.

### INDIA

The visit to India by the Executive Officer of IUCN's Commission on Environmental Planning in February 1983 was timely, as the Government is in the process of considering national conservation strategy work.

During this visit it was agreed that the best way of promoting a strategy at this stage would be through the elaboration of conservation inputs in the next (7th) Indian Development Plan for 1985-89.

A separate chapter on environment will be developed for the Plan. It will identify major issues and provide specific input into the Plan as a whole, by focussing upon sustainability of resource use.

The *Ministry of Environment* intends to convene a core group of experts to prepare initial documentation, along with a more formalised advisory body including representation from the Indian National Planning Commission.

### INDONESIA

The Government of Indonesia has developed a type of NCS, which has not yet been made generally available and is believed to be of limited scope. This followed a series of reports produced by the Food and Agriculture Organization of the United Nations (FAO) entitled "National Conservation Plan for Indonesia", which deals with parks and protected areas.

### IVORY COAST

The Government of the Ivory Coast has requested assistance from IUCN in the development of a national strategy and initial meetings are scheduled for June/July this year.

### MADAGASCAR

Discussions were held in April between representatives of IUCN/WWF and the Government of Madagascar. The meetings were at the request of the Government and consideration is now being given to the exact framework within which the NCS should be developed.

### MALAYSIA: MORE STATE REPORTS COMPLETED

The conservation strategies for the states of Malacca and Trengganu in Malaysia were released in March 1983 by the *World Wildlife Fund of Malaysia*, which is preparing strategies on a state-by-state basis. The report for Negri Sembilan has been completed, and the one for Kedah is to be finalised before August 1983.

### MEXICO

The *Instituto Mexicano de Recursos Naturales Renovables, A.C.* is working closely with the national authorities in promoting the WCS principles in the work of the country's various national organizations.

### NEPAL

His Majesty's Government of Nepal is reviewing the National Conservation Strategy Prospectus, produced by an inter-ministerial group in conjunction with IUCN. It is hoped that the main phase of the strategy will begin later in 1983, after publication of the Prospectus.

### NETHERLANDS: REVIEWING POLICIES

A half-year study to investigate the possibilities for a thorough review of the Netherlands' national/international policies with regard to the WCS started in January 1983. The study is being conducted by two environmental institutes in Amsterdam and is financed by *WWF-Netherlands*. A Committee in which members of the *WCS Steering Group* and the Department of Nature Conservation of the *Agricultural University* participate, is assisting with the study. There is also a close cooperation with the *Ministries of Housing and Environmental Management* and of *Agriculture and Fisheries* (Nature Conser-

vation Department) with regard to their WCS activities.

### NEW ZEALAND

New Zealand is pressing on with work on the Conservation Strategy. Submissions from government departments are being studied by a steering committee convened by the *Department of Lands and Survey*, New Zealand's state member of IUCN. The next step will be the drawing up of draft principles which will be released for public comment before they are finally considered by the Government.

### PAKISTAN

The Government of Pakistan has requested IUCN's assistance in developing a wildlife conservation strategy. The idea of a broader, national strategy is currently being considered, and a preliminary IUCN mission will visit Pakistan later in 1983.

### PHILIPPINES

The Philippine National Conservation Strategy Project is now entering the final stage of its preparation. The work of local conservation and development experts has been formulated into eight draft papers, including one which outlines alternative strategies, which will be presented at a conference in mid-June.

The Philippine National Conservation Strategy is being developed by the Haribon Society, a local non-governmental organization, and is supported by an operational grant from USAID.

The Philippine Strategy brings together experts from academia, government and industry. Official links have been made with the Office of the President of the Philippines and with local governments, and a national committee has been formed to promote the implementation of recommended strategies.

### PORTUGAL: WCS TRANSLATED

The World Conservation Strategy has now been translated into Portuguese by *Serviço de Estudos do Ambiente* in Portugal.

A new environmental foundation is being established in Portugal, with the support of the *Gulbenkian Foundation* and the *Industrialist Foundation*. As a first project, the foundation will draft, in cooperation with IUCN, a Portuguese conservation strategy.

### ST. KITTS AND NEVIS

The development of an NCS was started in St. Kitts and Nevis under the *Eastern Caribbean Natural Areas Management Program* (ECNAMP), but work has temporarily been suspended.

### SENEGAL

Initial meetings have taken place between IUCN and representatives of the Government of Senegal on the development of a strategy. The IUCN mission to Senegal to discuss this in detail, which was scheduled for earlier this year, will now be held in July 1983.





## SEYCHELLES

The Government of Seychelles has already completed much of the background work on a national environment strategy. The Government has requested IUCN's assistance in developing the actual strategy, and the terms of reference have been agreed upon. A proposal has been drawn up and submitted to UNEP for consideration, under which UNEP would be closely associated with the project.

## SOUTH AFRICA

The Conservation Committee of the *Wildlife Society of Southern Africa* compiled in April 1978 "A Policy and Strategy for Environmental Conservation in Southern Africa". The report summarises the findings of a workshop convened by the Conservation Committee, which formulated a set of principles pertinent to national needs in the future. This report has since been revised twice, and it is intended that it will be revised annually. Future workshops will develop a detailed policy and action plan for the Society within the framework of the national strategy.

## SPAIN: FOLLOW-UP DELAYED

The change of government in Spain has led to modifications in the role of the *Inter-ministerial Commission of the Environment* (CIMA) which prepared the Spanish Conservation Strategy in 1980. Follow-up to the strategy has therefore been slower than hoped, and the plan of urgent measures related to the strategy, which CIMA was charged in December 1981 to produce, has not yet been made available.

## THAILAND

Implementation of several projects identified in the 1979 study "Conservation for Thailand — Policy Guidelines", which was effectively a very early form of a national conservation strategy, has now started in a collaborative programme between IUCN, WWF and the *National Environment Board* of Thailand.

## UGANDA

In response to a request from the Government, an IUCN exploratory mission to Uganda took place in March 1983 to hold initial discussions on the structure and scope of a national strategy. Work is now proceeding on the development of a framework for the work programme.

## UNITED KINGDOM

The launch of the Conservation and Development Strategy for the United Kingdom took place on 8 June 1983 in London.

## ZAIRE

IUCN has received a request from the Government of Zaire for assistance in the development of an NCS.

## ZAMBIA

Discussions took place in March 1983 between members of the Zambian Government and representatives of IUCN on the

national conservation strategy for Zambia phase I draft report. The report is currently being finalised and the main mission for the development of the NCS is now being planned. □

### AN OVERVIEW OF NATIONAL CONSERVATION STRATEGY DEVELOPMENT (MAY 1983)\*

| COUNTRY         | CURRENT STATUS OF NCS DEVELOPMENT                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|
| Australia       | National Conference to discuss draft NCS postponed until June 1983                                                        |
| Belize          | Draft report on NCS by IUCN mission completed and submitted to Government                                                 |
| Canada          | Responsibility for implementation of WCS assigned in Government                                                           |
| Czechoslovakia  | Sub-national strategy under preparation; first phase to be completed in 1984                                              |
| India           | NCS under consideration by the Government                                                                                 |
| Italy           | NCS under preparation to be completed mid-1983                                                                            |
| Ivory Coast     | Government has requested assistance from IUCN in developing NCS                                                           |
| Madagascar      | Discussions on NCS development held between Government and IUCN team in April 1983                                        |
| Malaysia        | NCSs currently under preparation on state-by-state basis                                                                  |
| Nepal           | Draft NSC "Prospectus" completed and under formal review by Government                                                    |
| Netherlands     | Study being undertaken to review national/international policies with regard to WCS                                       |
| New Zealand     | Evaluations made by government departments and agencies being studied for drawing up of draft principles                  |
| Norway          | Study completed by Parliament containing proposal for NCS                                                                 |
| Pakistan        | Development of NCS proposed and preliminary discussions to be held later in 1983                                          |
| Philippines     | NCS currently being prepared under the auspices of Haribon Society                                                        |
| St. Kitts/Nevis | NCS being developed by ECNAMP (work currently suspended)                                                                  |
| Senegal         | Programme of meetings between Government and IUCN mission scheduled for July 1983                                         |
| Seychelles      | Much background work already completed by Government. Government and IUCN now discussing development of full strategy     |
| South Africa    | NCS completed by Wildlife Society of Southern Africa                                                                      |
| Spain           | NCS completed by Inter-ministerial Commission on the Environment (CIMA)                                                   |
| Sri Lanka       | NCS being prepared by National Task Force                                                                                 |
| Uganda          | Discussions held between Government and IUCN mission March 1983. Future work to establish framework for NCS being planned |
| United Kingdom  | Strategy reports launched 8 June 1983                                                                                     |
| Zaire           | Request for assistance in developing NCS received by IUCN in March 1983                                                   |
| Zambia          | Phase I report being finalised and main work phase being planned                                                          |

\* This listing is based on the data available at the time prepared. The information may thus be incomplete. We strongly encourage additional information to be sent to IUCN for incorporation into future issues of the WCS in Action supplement.





# FOCUSSING ON FOREIGN POLICY



A woman builds her own house in Dandora, Nairobi (Kenya), as part of a programme funded by a number of aid agencies.

Credit: IPPF/Paul Harrison

**Richard Sandbrook** of the International Institute for Environment and Development (IIED) recently prepared "The UK's Overseas Environmental Policy" of Earth's Survival, A Conservation and Development Programme for the UK. In the following article he draws from this experience in discussing how aid and trade policies of the industrialised world are not always helpful for the achievement of sustainable development in the developing world.

Those concerned with the follow-up to the World Conservation Strategy (WCS) often assume that the major emphasis should be in the developing world. This is understandable, given the speed and magnitude of environmental change in the Third World countries. But British experience suggests that the WCS also can be used to good effect as a trend-setting or question-raising lever in the industrialised countries of the 'North'.

The issue is not so much what is happening to the generally well-protected environments of Europe and North America. There is room for improvement, but domestic environmental lobby is firmly dug in and campaigning on many fronts. What is missing is focus for change on two vital aspects of Northern policy: national aid and trade investment.

Take aid. Put at its simplest, a shift of priorities in the combined Organisation for Economic Co-operation and Development (OECD) bilateral aid budgets (some \$3.5 billion yearly) of 1 per cent would release almost \$36 million a year. What if that was entirely devoted to improving the indigenous management skills of Third World countries to pursue the sustainable development approach set out in the WCS? Or what if all development assistance projects were properly planned and executed

and then audited from an environmental point of view? The effect would be both dramatic and immediate.

But we must not only be concerned with the yearly flow of some \$3.5 billion from the bilateral aid coffers.

The argument can be extended to the posture of Northern governments to the multilateral group: in UNEP (which still employs fewer professional staff — about 150 — than many large environmental non-governmental organizations), in Unesco, FAO and WHO, not to mention UNDP and the multilateral development banks. Do the Northern delegations pursue environmentally sensitive positions there? Do they internally coordinate their environmental positions between different meetings and delegations? Do they have a shared environmental policy for the countries with which they have the most dealings? In each case the answer is, sadly, no.

It is little wonder, therefore, that as many as five different governments or multilateral agencies may be trying to carry out environmental profiles for the same country. Some Northern governments constantly accuse the UN of duplication of effort, of internal bickering and inefficiency. Perhaps it is time that these governments got their own external environmental act together.

In Britain, the exercise mounted in response to the WCS is trying to achieve this in a way that suits the particular organization of the British Government. But one suspects that the ideas can be adapted to most OECD circumstances. The first job was to inventory the many lead agencies working on the aspects of the WCS agenda. The resulting list included the links to the relevant UN agencies, to the Commonwealth and to the European Community, to the multilateral agencies, to the OECD (environment and development

committees) and to the direct links by way of treaties and conventions (e.g. Antarctica). The exercise set out to establish who, in which department, determines the policies and, more importantly, who coordinates them. Is the policy public? Is anyone accountable for it?

The second step was to group, again as an inventory, all the non-governmental or quasi-governmental agencies interested in overseas environmental issues: the universities, institutes, private sector interests and the NGOs.

The third step was to work up mechanisms for better coordination between all the national actors, so that an effective and planned approach can occur. Similar reviews in other countries would doubtless highlight a lack of coordination and policy gaps. Comparisons among Northern governments would demonstrate the absence of any coherent policy between them. This is absurd, considering the emphasis put on having common defence policies, economic policies and even consumer policies. If we are concerned about the global environment, we should pay more attention to helping each other in the environmental sphere.

Examples of where the present *ad hoc* measures fail are not hard to find. We now hear of the Northern agencies promoting environmental profiling, environmental stock-taking, environmental agenda setting, and, of course, national conservation (read "sustainable development") strategies in the Third World. All are part of the same story, and all need to be blended into a unified approach. There are precedents for this, in the form of national development plans and national food strategies. A more coherent position is not an unachievable goal.

The trade and investment aspect of the Northern response to the WCS is much more complex. In many ways it is the point at which the sustainable development approach parts company with three-quarters of the traditional development crowd. In Britain, we ducked this issue despite its central importance. Questions almost too complex to answer presented themselves. Should we, through aid and relaxed (or not so relaxed) trade relations, encourage cash and exportable crops in the poorer countries? Do export crops result in the rich getting richer, the poor getting poorer?

If the use of marginal land for subsistence agriculture has something to do with land tenure laws and, in turn, if Northern demands for out-of-season carnations and coffee beans affect these laws, what are the North's responsibilities? Does Northern demand for timber help turn moist forests into dry deserts?

Sadly, the links between a country's environment and its style of agricultural production and development are still poorly thought out. But it must remain a priority of the IUCN family to explore these links if a sustainable future for man and beast is to be realised. □





# NCS VIEW ON THE URBAN ENVIRONMENT

*In view of the World Conservation Strategy and the development of national conservation strategies, Joan Davidson has analysed the problems of the urban fringe in relation to the environment, both in the developed and developing world. Joan Davidson has together with Ann MacEwen written "The Livable City" as part of A Conservation and Development Programme for the UK (Kogan Page), which will be published in June 1983. She is also, together with John Davidson, advising the Zambian Government, on behalf of IUCN, on the preparation of a national conservation strategy.*

Within two decades, more than half the world's population of around six billion will be living in cities, and 12 of the largest ones will be in the Third World. Cities of 20 or even 30 million people will not be uncommon.

This is expansion on a scale and at a pace which has profound repercussions for the environment, not only because urban demands threaten more and more of the natural resource base upon which all life support depends, but because these cities

are becoming so much more difficult and costly to sustain.

In the past, settlements were supported by their hinterlands which provided food, fuel, water and building materials and absorbed their wastes. Now these resources must be imported over long distances at increasing costs — which fall most heavily upon the urban poor. In the developed and the developing world, it is they who must tolerate the worst kind of living environments and they are largely powerless to change them.

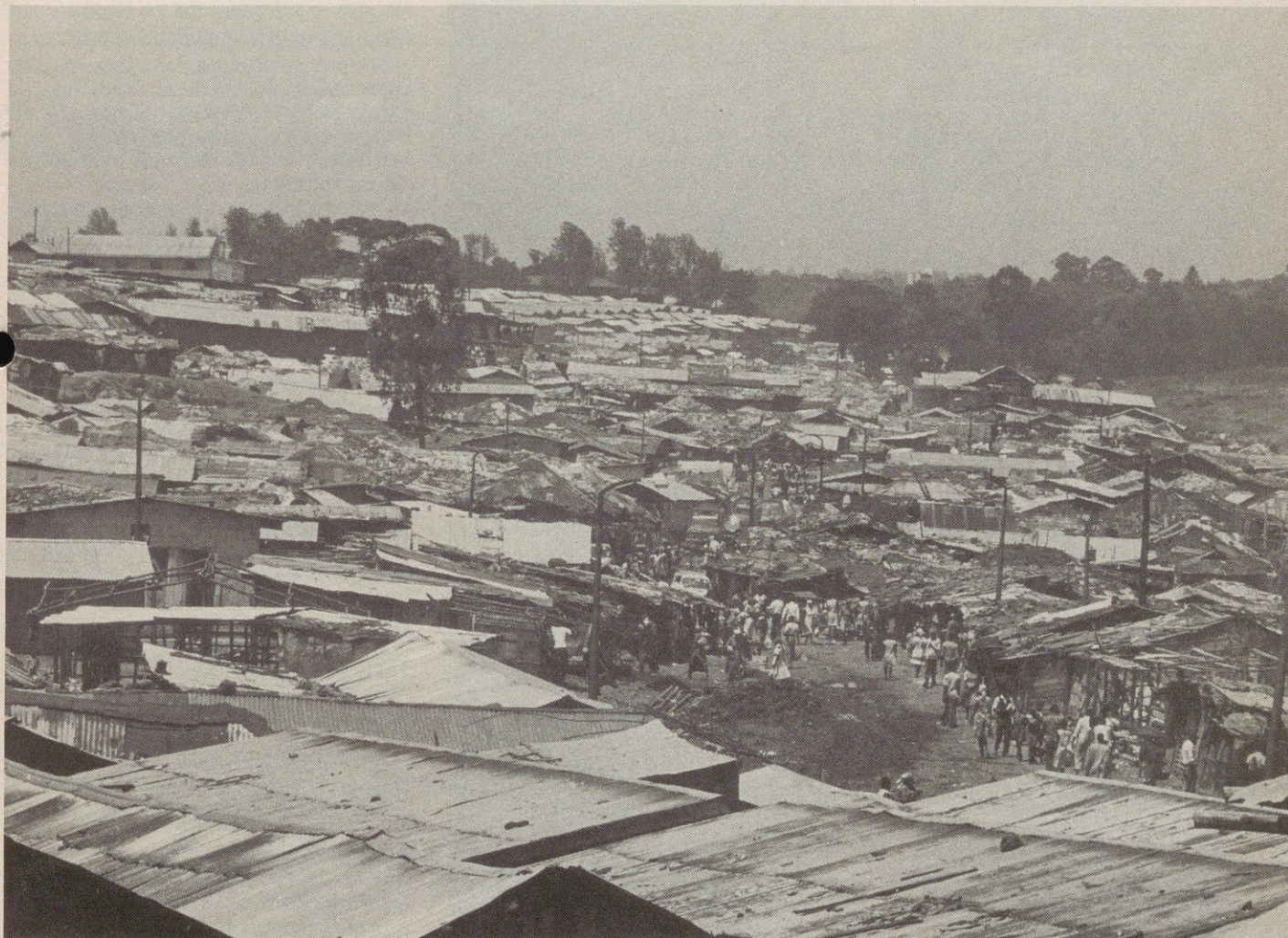
For most of the major settlements of the Third World, building land is so scarce and highly priced, development so costly and incomes so low that at least a quarter of their inhabitants, sometimes over half, live in poorly serviced shanties at the urban edge. Squatting is often forced onto farmland and forest, steep unmanageable slopes and mosquito-infested swamps where the lack of cultivable land, fuel and building materials, flooding, air and water pollution and inadequate waste disposal contribute further to the extreme poverty of living conditions.

In the context of human settlements, the message of the World Conservation

Strategy is about three things — reducing the damage cities do outside their area, finding ways to support them more cheaply and more reliably with the resources they need and doing both in ways that improve the quality of urban living.

The resource problems of settlement margins are familiar. They include almost all of those which the WCS identifies as evidence of the growing devastation of natural systems. But around the world's cities, this devastation is magnified as so many problems occur together. Development consumes open land of all kinds. Even where it is not directly built upon, good farmland can be blighted by wastes and speculation. In the Third World, overcropping and overgrazing often result in permanent degradation of the soil and other consequences follow — erosion, flooding or the encroachment of desert. At the urban edge, wild habitats are being lost which not only have cultural and recreational significance but may contain species of medical and commercial value.

All these changes are often precipitated by the clearance of trees for fuelwood and charcoal. Around many cities of the South, the devastation is so complete and the price



Mathare Valley, Nairobi: More than 1/4 of the inhabitants of some Third World cities live in poorly serviced shanties at the urban edge.

Credit: IPPF/Sean Sprague





of kerosene (and even charcoal) so high that urban families have insufficient fuel to cook food and keep warm. Women and children spend precious time and energy hauling firewood.

There is now so much interest in fuelwood planting that the World Bank, the United Nations and other aid agencies are supporting a number of projects on the urban edge. But almost nowhere is replanting and natural regeneration keeping pace with deforestation; only a few of the planting schemes have linked the multiple resource needs of urban communities.

Some households spend so much of their limited cash income on food and fuel that virtually nothing remains for shelter. More demonstrations are needed of how food, fuel and fodder crops can be produced in association with site-and-service and settlement upgrading schemes — one example is the Dandora shamba project in a suburb of Nairobi, partly funded by the World Bank.

Urban water supplies, even borehole sources, are frequently polluted by human, crop and animal wastes. For some settlements, like Mexico City, drinking water must be expensively pumped from many miles away.

In the North as well as the South, some cities now have no suitable sites left for tipping their refuse. Like Singapore, they dump the garbage in places which may threaten the long term quality of soils and groundwater. Most Third World city dwellers are already skilled at turning cardboard boxes into homes and hub caps into cooking pots. But there are opportunities for dealing in resourceful ways with much more urban waste — recycling materials and composting crop and food residues.

All these issues are beginning to impinge upon Third World city planning. While they are not the major concern of urban strategists faced with providing low cost shelter and sanitation quickly, the management of natural resources increasingly determines how successful urban strategies will be in implementation. Nor is this just a question of getting the location of development right, but of increasing the self-sufficiency of human settlements and managing the resource base (and the activities of traditionally separate urban institutions) in ways which can generate more jobs and raise incomes.

Few of the national conservation strategies completed or in progress have

tackled urban issues in this way or looked at the need to integrate many different aspects of resource use with the development and management of human settlements. It is proposed to try the approach in Zambia and urban issues have been a major component of the UK so far.

Britain's urban problems are clearly very different from those of the Third World. They stem as much from the declining fortunes of once prosperous industrial and commercial centres as they do from urban encroachment onto open land and natural systems. Yet there are striking parallels. The cities are costly to run, wasting materials and energy in poorly maintained and uninsulated buildings and in inefficient transport systems. Much land which could be better used to support city living lies idle and degraded. Most of the refuse is still thrown onto the land around the built-up area, polluting soils, air and water, when it could be generating energy, fertilizers, metals and reusable materials of many kinds.

The Livable City — urban report of the UK Conservation and Development Strategy — argues that developed urban societies are missing the opportunities of a more resourceful approach. They must adapt quickly to a less certain and inevitably more costly resource future, both to prevent the costs of crisis management but also to safeguard the environment and resource position of other countries.

There is great scope for adaptation, by saving energy in buildings, transport and equipment, by renewing housing and infrastructure, by reclaiming wastes, using vacant land more productively and by promoting enterprises which link resource saving with local economic regeneration. This resourceful approach could bring many benefits — some cheaper-to-run services, more jobs, better local environments and opportunities for people to participate in the decisions which affect their daily lives.

But the benefits will only accrue if resource saving permeates the activities of many different groups — central and local governments, industrial, commercial and financial institutions, community organizations and urban people themselves: they have a key role to play in the transition to more sustainable cities.

The self-help movement is already strong in Britain and much activity is directed to resourceful ends, but it needs to be supported to a far greater degree by the actions of government and business. Just as in the Third World, self-help has come a long way; yet, it too often legitimises a lack of action by government and the private sector.

Releasing the energies of urban people and enabling them to be more resourceful is an important theme for national conservation strategies to explore, but the lessons will go both ways. Perhaps a new approach and new skills of city management in the North can assist those in the South anxious to avoid some of the developed world mistakes. And there may also be much the North can learn about resourcefulness in return. □



*The urban environment of the poor — inadequate diets, shelter, sanitation and garbage disposal bring disease and early death: one in three children living in shanties may die before they are five.*

Credit: IPPF/Mark Edwards





*Neighbourhood in north London: Many inner cities of the developed world face a crisis of management as costs rise while services, jobs and environment decline. New investment in resource saving programmes of housing, energy conservation and the re-use of wasteland could bring more jobs and a human scale to urban living.*

Credit: Robert Cowan

If you would like a copy of the World Conservation Strategy, available in *English, French and Spanish*, it can be ordered from:

**IUCN Publications Division  
World Conservation Centre  
1196 Gland - Switzerland**

The cost per copy is US\$5.00, with a 20% discount for bulk orders of 100 copies or more. Surface postage and handling amounts to 10% of the total cost and airmail postage and handling 30%.

The WCS has also been translated into *Czech, Chinese, Danish, German, Hungarian, Indonesian, Italian, Japanese, and Portuguese*. Translations into *Arabic and Swahili* are currently in preparation, and a *Polish* version will be available towards the end of this year. Requests for copies in these languages could be addressed to IUCN, where you will be put in contact with the organization responsible for the translations.

## CONFERENCE ON WCS IMPLEMENTATION

**Mark Halle** of IUCN reports on the outcome of the preparatory meeting, held in Ottawa, Canada on 2 March 1983, to discuss a conference on the implementation of the World Conservation Strategy in 1986.

When the World Conservation Strategy was launched in March 1980, great pains were taken to stress the fact that the Strategy was not simply a document but a call for action along lines which it spelled out in great detail.

Now, three years later, serious momentum has been gained in implementing the WCS. By far the most effective tool in this respect is the development of regional or national strategies. This is now proceeding in a growing number of countries, and new requests are received by the three organizations with increasing frequency.

A great deal of work has also gone into further development of the concepts underlying the Strategy. IUCN's Commission on Environmental Planning (CEP) is particularly active in this respect.

Following the success of IUCN's World Congress on National Parks and Protected Areas in Bali, Indonesia, the suggestion was made that a conference be held to evaluate the extent to which the World Conservation Strategy has helped reconcile conservation and development, and to

evaluate experiences, both positive and negative, in bringing about its implementation.

### BACKGROUND

Last year the Canadian Wildlife Federation (CWF), Canada's largest wildlife conservation NGO, approached IUCN's former Director General, Dr. David Munro, saying they wished to support an international conservation initiative, and asked for his guidance.

Dr. Munro suggested support for a major international conference on implementation of the World Conservation Strategy, and the idea appealed to the Federation.

Dr. Munro then brought the idea to the attention of IUCN, whose Council decided to approve IUCN sponsorship, with CEP taking the organisational lead. WWF also agreed to be a sponsor and the two organizations were subsequently joined by UNEP. An informal meeting to discuss the conference was convened in Ottawa on 2 March 1983.

The meeting fully endorsed CWF's initiative to convene the conference and pledged its full support. During the discussions, the recent successful example of the Bali conference was very much in mind. It provided an excellent model and starting point for the conference under discussion, although it was recognised that the model could not be followed entirely.

### CHARACTER OF THE CONFERENCE

The meeting proposed that the conference be professional and invitational, without diplomatic representation. Participants should be invited by agreement of the Steering Committee only (see below), on the basis of their ability to contribute substantially to the realisation of the conference objectives.

The geographical scope of the conference should be world-wide and there should be strong representation (technical, not diplomatic) from governments, in particular those with a record for implementing the WCS. Non-governmental participation (from development assistance agencies, inter-governmental organizations, non-governmental organizations, universities, etc.) should also be selected on the basis of their ability to contribute to conference objectives.

The possibility that a non-participatory audience be allowed to attend will be reviewed at a later stage, and will depend to some extent on logistical arrangements and venue. The number of participants invited should be limited to around 300, although it is recognised that actual participation will be closer to 400 or 450. The conference should under no circumstances expand beyond that.





## OBJECTIVES OF THE CONFERENCE

The principle objective is to promote the implementation of the World Conservation Strategy. This objective will be pursued both during the conference preparation (through "animation" activities) and, more important, during the conference itself, through a review of successes and failures in using the Strategy as a tool to bring about sustainable development. It was agreed that the objectives should be broadly as follows:

(1) To provide a forum for the exchange of information on all aspects of the preparation and implementation of regional, national and sub-national conservation strategies.

(2) To enable a public review of other aspects (national and international) of implementation of the World Conservation Strategy. This is admittedly a very broad area of interest and it will probably be desirable to select certain topics for intensive review while giving a once-over look at others. In addition, attention could very usefully be given to North-South implications of the subject, e.g. a review of the nature of North-South collaboration in the field of conservation, flows of development assistance funds, etc.

(3) To stimulate the implementation of the WCS during the period leading up to the conference.

## PROGRAMME

As an outgrowth of the objectives there should be three broad categories in the programme:

(1) A review of experience in developing national conservation strategies. This part of the programme would be the principal area of interest for governments and would focus on operational experience in trying to implement strategies at the national level and should provide representatives from governments with their principal area of interest.

(2) A review of more conceptual developments relating to implementation of the WCS, such as development of guidelines or evaluation and analysis of experience in relating the Strategy to selected functions (e.g. education, law) and sectors (e.g. agriculture, forestry) as well as international linkages. These programme elements should provide the key area of interest for the inter-governmental and non-governmental participation, although they will be of central interest to government representatives as well.

(3) A review of experience in bringing the Strategy's message to the general public.

The conference should also provide a forum for less formal presentations in the form of "poster" sessions in the evenings, at which time participants can show films and audio-visual presentations and organise informal discussion groups. In addition, the merit of organising a "tag-on"

day to the conference for Canadian participants was felt to be useful and will be reviewed further.

## COORDINATION

Overall direction in preparing the conference should be provided by a Steering Committee, comprising high level representatives from each of the sponsoring organizations. The first meeting of the Steering Committee will be held in June. The Steering Committee should provide overall guidance during conference preparations, and it is hoped that it will endorse the decisions taken by a working group similar to the group which met in Ottawa, which would continue to coordinate things at a more detailed level. This working group should plan on meeting with regular and increasing frequency, depending on the flexibility of the conference budget. The working group should essentially coordinate between four principal areas: fund-raising, programme, animation and logistics.

## LOGISTICS

The target date for the conference is early June 1986, filling a frame of ten days (possibly 31 May to 8 June). The conference should be held in or near Ottawa although other Canadian locales including Banff were suggested and will be considered further. Conference languages will be English and French with full service in Spanish if the budget permits. □

# ECG DISCUSSES NATIONAL CONSERVATION STRATEGIES

An *ad hoc* meeting of the Ecosystem Conservation Group (ECG) was convened at FAO Headquarters in Rome on 2-4 March 1983 to review progress in the preparation of national conservation strategies and to discuss and agree the modalities for future collaboration of the member organizations in this expanding field.

The ECG comprises UNEP, Unesco, FAO and IUCN. It first met in 1975 as a forum for facilitating cooperation and coordination between the four main international organizations concerned with conservation of natural resources.

Since the earliest days in the development of the World Conservation Strategy, the ECG has provided a forum for inter-organizational cooperation at all aspects of the Strategy.

At the meeting, agreement was reached on a number of important issues on the respective roles of the organizations and on where the emphasis of the Group should be placed.

Bearing in mind its limited resources, the Group agreed to support the development of up to three NCSs per year. It would, however, be necessary that the relevant official requests were received from the countries concerned, and there would also have

to be a form of screening to ensure that countries were selected for support on a rational basis.

Although for the moment the formal participation of the Group would be limited in this way, it was recognised that the individual members of the ECG would be supporting NCS work in a number of other countries continuing to feed information back to the Group on all progress made.

Concern was expressed at the inevitable variation in scope and quality of NCSs developed in different countries and the processes by which they were developed. If the NCS concept is to be seen as a major tool for the achievement of sustainable development throughout the world, care must be taken to ensure a certain conformity of standards.

The draft "National Conservation Strategy for Nepal: A Prospectus", produced by His Majesty's Government of Nepal in association with IUCN and with the collaboration of ECG members, was discussed in some detail as a basis for consideration of further NCS work. In this connection the cultural dimension, introduced within the Prospectus as a consideration of major importance, was

recognised by the Group to be an essential component of future national strategies.

UNEP's Clearing House facility was also discussed as far as its relationship to NCS work was concerned, and it was agreed that the facility should eventually be used to finance specific parts of the action programmes resulting from strategies.

It was agreed that a draft project proposal should be prepared, outlining the ECG's involvement in the preparation of NCSs in the related countries, for discussion at the next ECG meeting. □

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WCS in Action  
World Conservation Centre  
1196 Gland, Switzerland



# INSIDE IUCN

## COMPUTING THE COURSE FOR CONSERVATION

*Data Processing May Spell a Revolution for Conservation Information. Here Duncan Mackinder looks at the data capabilities of IUCN's Conservation Monitoring Centre (CMC).*

by Duncan Mackinder

For conservation to be effective, which it must be if there is to be a long-term future for mankind, conservation action must be based on the maximum possible amount of up-to-date information. Such information includes scientific data on the status of species and ecosystems of conservation concern as well as information on the current activities of the world's network of conservation organisations. The amount and complexity of information is so vast that in order to provide fast and accurate assessments of the world's conservation problems, the services of computers are becoming increasingly essential. Thus, the IUCN Conservation Monitoring Centre has embarked on an ambitious programme to build a computerised database to hold as much as possible of its rapidly expanding collection of data. The Conservation Monitoring Centre (CMC), which was originally set up by IUCN's Species Survival Commission, and is now a full division of IUCN and also an integral part of the UNEP-administered Global Environment Monitoring System, has the task of collecting and analysing data on animals and plants of conservation concern, protected areas and wildlife trade. Data from all four units of CMC are now being filed on the CMC Wang VS80 computer sited at Kew (and the smaller Wang OIS in the Centre's Cambridge office) in such a way that printouts may be produced which integrate information collected by all four CMC units (e.g. a list of Peruvian flora and fauna which are found in international trade and are also found in protected areas). These outputs are designed to allow conservation planners, both in IUCN, WWF, UNEP and elsewhere to take decisions in the light of the fullest possible information.

In general, computers store information in two rather different ways, as text in word-processing systems and as data in data-processing systems. Both methods of storing information have their strengths and weaknesses and so the CMC database is split between these two modes in order to get the best of both worlds. Text files are flexible and can contain any amount and complexity of information, however computers cannot easily and automatically analyse a piece of text to find all the information relevant to any given problem and then present that information in some different form. Therefore, summaries of the information are stored in data processing files, from which data can be selected, sorted and presented in a wide variety of tabular formats. Thus the data files are used to produce lists of species or protected



*The IUCN Conservation Monitoring Centre is building a computerised data base to hold as much as possible of its rapidly expanding data collection*

Credit: Michèle Dépraz/WWF

areas of importance for any particular conservation problem, and fuller details about those species or protected areas may then be found from the associated text files.

The text files from the word processing system contain data sheets which are published in a variety of ways, notably in the well-known Red Data Book series (on threatened animals and plants) and in the series of Protected Areas Directories (on the world's national parks and protected areas). Other publications are focused on particular topics, for instance, an assessment of the status of threatened European plants and animals.

The data processing side of the database is split into four main sections — plants, animals, protected areas and wildlife trade, which are united by common geographical and taxonomic skeletons which enable database enquiries and printouts to span the whole database and not be restricted to just one section.

In order to enter data into the database files, the data must first be coded. Some of this coding is being done by the CMC staff and some by the computer itself. Thus distributions of animals and plants are entered in terms of a standard series of area names and the computer then translates each area name into its area code. Since the computer is doing the code translation it is also checking whether the area names are 'known' to it, thereby reducing the chances of typing mistakes going un-noticed. On output, the area codes are translated back into area names, and since various different translation tables may be used, area names can be output in any of a variety of different languages. Conservation action often occurs at the national level but animal and plant distributions are dictated

by bio-geographical factors rather than political ones, thus the geographical coding scheme must enable outputs to be produced in accordance with both political and biogeographical classifications.

Similarly, the identities of all animal and plant taxa in the database are stored as taxon codes. The same code may appear many times in different places in the database since many different pieces of information are relevant to that animal or plant. However, its name, code and relationship to other taxa in the database are only stored once in the CMC 'taxatree' system. Thus, to change to the spelling of a taxon name or to alter its taxonomic position only one change is necessary, thereby ensuring that the taxon is always known by the same name throughout the database. The 'taxatree' system when complete will allow for synonyms and even differences of opinion about the taxonomic position of any taxon, so that, for example, for some purposes, a genus may be classified in one family whereas for other purposes it may be in a different family. This will enable CMC to produce output to suit different taxonomic classifications from the same database.

Out of the estimated world total of 20,000 to 25,000 threatened plants species, the plant data file stores information on some 13,000 plant taxa which have so far been identified as threatened or which are in groups of special conservation concern such as the cycads and tree ferns. The information stored consists of distribution data and conservation status at world, regional and individual area levels. Habitat data is currently being added on a trial basis for European taxa. Linked to the main plants file is another data file containing

*Continued on page 63*



# SPOTLIGHT

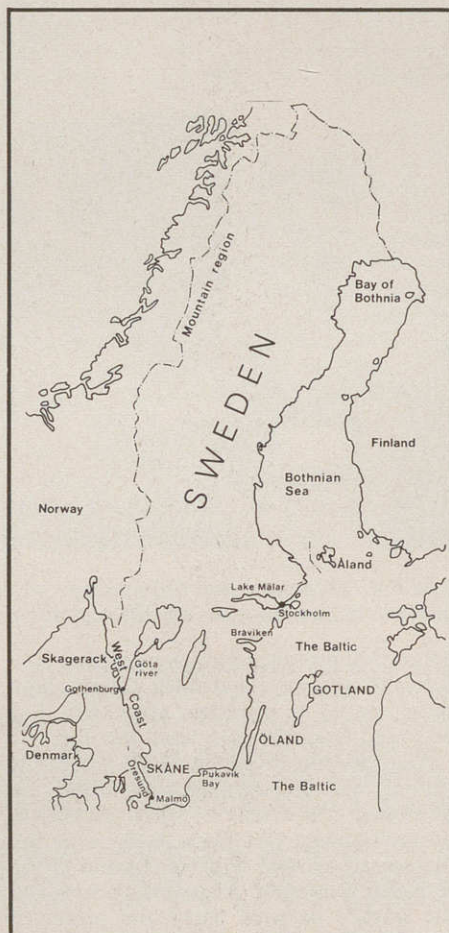
## SWEDEN: IUCN's Members Tackle Top Environmental Problems

by Raisa Scriabine

Sweden has always played a leading role in the fight to conserve the environment. More than ten years ago Sweden hosted the United Nations Conference on the Human Environment in Stockholm. Since that time much progress has been made in setting right ecological wrongs. Yet the war is far from won — and many of the battles ahead look larger than ever.

In comparison with many industrialized countries, Sweden has been called an "ecological paradise." With eight million people living in an area the size of France and nearly 100,000 lakes and forests that cover half the country, the air and water in Sweden are cleaner than in many other nations. Sweden has a substantial network of national parks — 16 to date with plans in the works for three more. Some three to five per cent of Sweden's total land surface is protected as national parks or nature reserves. Environmental legislation is tough and strictly enforced. The 'green' movement is among the strongest in the world. To top it all off, Sweden has made progress in the last decade in fighting environmental damage. For example, ten years ago swimming in Stockholm's Lake Mälaren was a decisive health hazard. Today bathing beaches abound and to the delight of the Swedish fisherman — the salmon is back in the lake. The Baltic Sea a decade ago was on the environmental disaster list. Concern over the enormous amounts of wastes discharged into the ecologically fragile Sea led, in March 1974, to the signing of the Convention of the Marine Environment of the Baltic Sea Area, the 'Helsinki Convention.' In May 1980, the Convention entered into force thus launching the seven Baltic countries into what has become perceived as a model environmental cooperative endeavour.

Sweden has in recent years enacted some strong environmental laws including the Acts for Environmental Protection, Nature Conservancy, Forest Conservation, Dumping and Swedish Game. In 1973 the Act on Products Hazardous to Man and the Environment came into force. Sweden also has a law debaring water pollution by ships which specifically prohibits all discharges of wastes from ships in Swedish territorial waters. Since the Riksdag (the Swedish Parliament) gave its approval to the Government's proposals concerning the conservation of land and water resources in 1972, Sweden has emphasized an ecological approach as the basis for physical planning. Yet, today all is not perfect. Sweden faces some tough environmental problems. This article looks at these problems and at how IUCN's members in Sweden are tackling them.



Credit: Svenska Institutet

### Acid Rain

Ask anybody "what is the major environmental problem in Sweden?" and most likely they'll say "acid rain." Acid rain is caused mainly by sulphur dioxide ( $\text{SO}_2$ ) and nitrogen oxides ( $\text{NO}_x$ ) discharged into the atmosphere from the burning of fossil fuels like coal, oil or gas as well as by certain industrial processes such as metal smelters. Every square metre of Sweden is subjected to acid rain with a disastrous impact on the natural environment — on the soil, groundwater, lakes and waterways. About 18,000 of Sweden's 100,000 lakes have been damaged by acidification. Some 4000 of these are seriously damaged — their pH value is below 5.0 throughout the year. Sweden's Lake Tvärnsjön, for example, has a pH of 4.6 — in the same range as orange juice. Several thousand more lakes will be threatened if the acid rain continues to fall at the present rate.

Apart from the ecological effects such as the disruption of fish production, acidification of lakes and waterways can develop in-

to a health problem. A link has been established between low pH values and high mercury levels in fish.

Acidification in Sweden can also mean an impending risk of reduced forest productivity and contaminated groundwater. Acid rain mobilizes heavy metals in poorly buffered soils, increasing their toxicity. It also leaches calcium, magnesium and potassium from the soil, depriving trees and other vegetation of essential nutrients for growth. Acid precipitation percolating through the soil can wash heavy metals into reservoirs. In the province of Bohus on Sweden's west coast, 49 per cent of water wells tested had a pH below 5.5 and a number of people complained about corroded water pipes. Tap water in many houses in the area contained high concentrations of copper, zinc and, in some cases, cadmium.

Additional research will be needed to understand the long-term effects of acid rain particularly on soils, forests and crops. In the interim, public education and particularly international action in support of the ECE Convention of 1979 on Long-Range Transboundary Air Pollution is needed.

In Sweden, action is being taken to combat acid rain — a particularly difficult problem due to the fact that around 75 per cent of it comes from industrialized continental Europe. Towards the end of June 1982, a major international acidification conference was held in Stockholm. The Swedish Government hosted the conference, in which a large number of Ministers responsible for the environment and other official delegates took part. A special meeting of experts was held prior to the Ministerial meeting. The most important result of the Conference was that all common market countries now recognise the scope of the problem and its international implications. IUCN member, the Swedish Society for the Conservation of Nature set up the Swedish NGO Secretariat on Acid Rain to coordinate the activities of NGOs during the Conference. As a result, the NGOs played a prominent role in the proceedings culminating in the issue of a ten-point statement on acidification.

IUCN member, the National Swedish Environment Protection Board is the executive agency working at the government level, through various authorities and organizations to tackle the acid rain problem. Through its campaigns, the Board is working to spread knowledge of the effect of pollution.

Sweden has also taken active measures to combat acid rain by restricting the sulphur content of heating oil. The rules will be further tightened in 1984 when it will be for-



bidden to use heating oil with a sulphur content higher than one per cent. Sweden is also investing in calcification. Approximately 40-85 million Swedish crowns are spent a year on liming lakes.

## Wildlife Conservation

In Sweden, in this century, some twelve animal species have become extinct. The black stork, the white stork and the great bustard are gone forever. The middle spotted woodpecker vanished in 1982. Many others such as the peregrine falcon and the white-tailed eagle are acutely endangered. There are only 75 pairs of white-tailed eagles left in Sweden. However, measures have been taken to encourage conservation — the Swedish Forest Service, for example, has issued directives to preserve areas around nesting sites of birds of prey and other critical habitat. The Institute for Water and Air Research is involved in stork research and efforts to reintroduce the white stork are being discussed. Reduction of pollutants like heavy metals, DDT and PCBs in the environment increase chances for survival of a number of species. Yet 15 species are still in danger of extinction and another 24 are regarded as vulnerable.

IUCN members in Sweden are active in the species' conservation effort. The Swedish Society for the Conservation of Nature runs extensive projects to save the peregrine falcon and the white-tailed sea eagle. Both projects are supported by the WWF. The projects consist of research into the causes of why these species have declined as well as protection and management efforts. Due to artificial rearing and release of young in the peregrine project, the number of peregrine fledglings in southern Sweden has

continued to increase since the mid 1970s. Two important management aspects of the sea eagle project are protection of nesting sites and feeding in wintertime with poison-free slaughterhouse offal. As a result, the population has stabilized and has even begun to grow, due to an increased survival rate of young eagles during winter and the improvement in breeding successes.

In close contact with the Swedish Environmental Monitoring Programme and with support from WWF, a seal project is run at the Swedish Museum of Natural History. Among questions studied by this IUCN member are food ecology, population dynamics, reproductive outcome, environmental pollutant burden and histopathology of seals. Several institutions are collaborating including the Special Analytical Laboratory at the National Swedish Environment Protection Board.

Also an otter project was recently started by the Swedish Sportsmen's Association with the cooperation of the Museum and support of WWF. This project has much the same aim as the seal project.

The National Swedish Environment Protection Board has undertaken a study of the four large carnivores in Sweden — the lynx, the wolverine, the wolf and the bear.

There are approximately 1600 species of higher plants in Sweden (ferns and seed plants). Of these 130 are protected by law. Yet there are conservation problems such as the disappearance of many species as a result of changing agricultural and forestry practices. The total area of grazing land is shrinking; meadows and woodland are no longer used for grazing but planted with pine and spruce.

At the initiative of WWF Sweden, a study of the conservation status of the Swedish vascular plant species—Project Linnaeus—has been undertaken by scientists at the Swedish Museum of Natural History and the Botanical Garden of Uppsala University. The project has been running since 1975 with financial support from the National Swedish Environment Protection Board and WWF and has involved a large number of field workers, scientists and other concerned individuals. About 150 species thought to be endangered have been thoroughly studied in the field. The results indicate that 27 species have disappeared since 1850, another 34 are acutely threatened with extinction, and 53 are listed as vulnerable. The records kept at the Swedish Museum of Natural History are being continuously updated and suggestions and actions to remedy the situation are being made. Similar actions concerning endangered cryptograms are now under consideration.

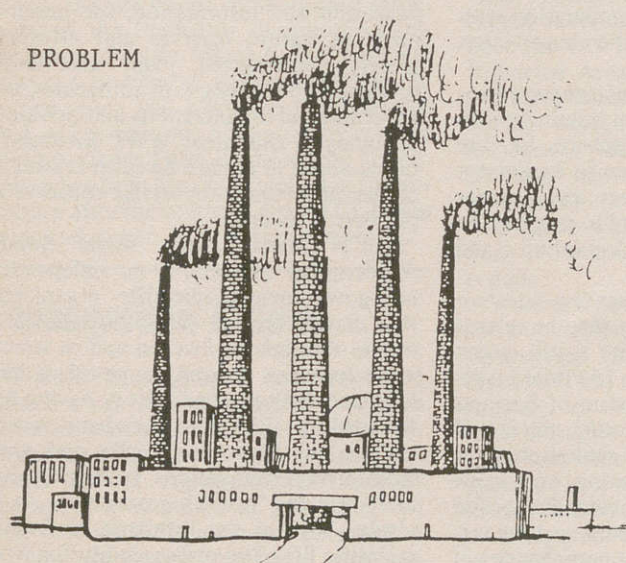
In the south of Sweden, the situation with respect to preservation of plants has been studied separately. In the province of Malmö, which includes one of Sweden's major urban regions and also has a very productive agriculture, some ten species have disappeared since 1910. 96 species are considered to be endangered — 25 of these are represented in only one place and are thus extremely vulnerable.

## DDT, PCBs and Heavy Metals

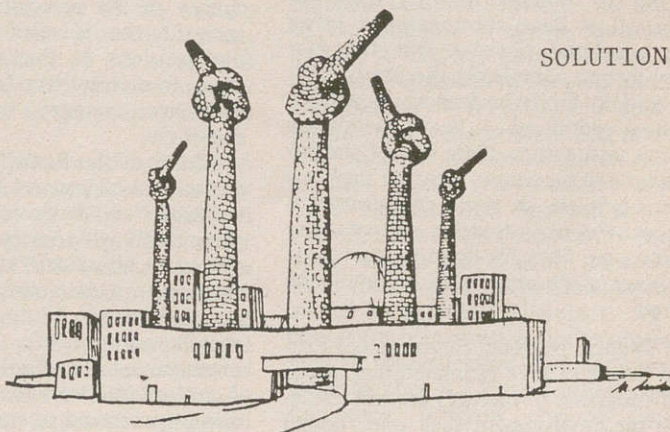
The pesticide DDT and the compounds known as PCBs (polychlorinated

*Continued next page*

PROBLEM



SOLUTION



*Acid rain is a problem in Sweden—though 75 per cent of it comes from industrialized continental Europe.*



# SPOTLIGHT

biphenyls) are toxic. Both are persistent and PCBs are bioaccumulative. In Sweden both DDT and PCBs are now banned entirely. Both the DDT and the PCBs in the Swedish environment have been reduced over the past decade. However, the PCB at a much slower rate than DDT. In the Baltic proper, today the DDT levels are only ten per cent of the levels found in the beginning of the 70s while the corresponding value for PCBs is about 50-60 per cent.

PCB pollution of the Baltic Sea has been linked to the disappearing seal population by scientific researchers at the Swedish Museum of Natural History which is conducting research on Baltic seals and promoting efforts at their conservation. There are three species of seal which inhabit the Baltic: the grey seal, the harbour seal and the ringed seal. The grey seal, which has hauling out sites off the eastern coast of Sweden, has decreased in population since the beginning of this century, when there were some 100,000 individuals, to the present, when less than 2000 are left. There are no more than 200 harbour seals left in the Baltic. While commercial fishing, hunting, recreational boating and shipping have all taken a toll on the seal population, the key reason for the population decline after 1950 seems to be the high level of PCBs in the sea water. Additional analytic work has shown that a great number of unknown compounds are present in the Baltic seals. Among the known pollutants found in the seals are about 130 different chlorinated compounds including chlorinated turpines (toxaphenes). While pollutants already in the Baltic cannot be removed, restrictive measures to curb further release of toxic substances into the waters of this vulnerable sea could have a significant impact on protecting the seals. It may not only be the seals that are affected. The drastic reduction in numbers of the otter during the 60s and 70s is also probably due to the PCB contamination of its principal food — fish.

Heavy metals is a collective term for cadmium, lead and mercury — all of which are damaging to human health. While in Sweden, all of these substances are being heavily regulated (Sweden was the first country to ban completely the use of cadmium and to limit the import of articles containing cadmium) — heavy metals are persistent and getting them out of the environment will take time. Bans on their use are not complete so some contamination continues. Petrol in Sweden still contains 0.15 grams per litre, for example, and some environmentalists argue that it should be lead-free.

The Swedish National Environment Protection Board in 1978 estimated that about 20,000 kilograms of mercury are still released into the environment each year though its use was outlawed in Sweden for most purposes since the 1960s. (It was used as a seed dressing and in paper industry). Today new lakes and streams continue to be added to the 'blacklist'. This applies to areas where the fish contain more than one mg of mercury per kilo of flesh and as a result

cannot be sold. Large parts of Vänern, Sweden's biggest lake, are on the 'mercury blacklist'.

The Swedish Museum of Natural History is responsible for the programme of studying environmental pollutants such as heavy metals and organochlorines within the Swedish Environmental Monitoring Programme. Biological samples are collected in about 20 areas each year and the specimens are collected and chemically analyzed for presence of bio-accumulating substances. The aim of the study is to find time-related trends in environmental pollutants. Simultaneously tissue samples of collected material are stored at -30 degrees C in order to make retrospective studies of environmental pollutants in the future. The annual accession to the bank of environmental samples is about 4000 specimens of fish, birds and mammals. The stored samples represent not only the material collected at the 20 areas mentioned but also specimens of rare species or top predators (that had been found dead in the wild) e.g. white tailed sea eagles, ospreys, peregrine falcons, otters, grey, common and ringed seals. Some of the species mentioned above are believed to be threatened by environmental pollution such as mercury, DDT and PCBs.

## Tackling the Problems

IUCN's members are active in meeting many of Sweden's environmental needs. We have looked at a few areas of their involvement but there are many more. The Swedish Society for the Conservation of Nature is also involved in programmes dealing with forestry, energy conservation and alternative sources of energy. It is working to help stop the exploitation of the country's last wild flowing rivers. The Society is also involved in teacher training for elementary school conservation education and maintains close cooperation with other nordic countries in the conservation field.

The Swedish National Environment Protection Board is the central administrative agency in the ecological sphere, i.e. the authority that is called upon to implement the decisions of Parliament and government, to monitor trends and to propose the necessary changes in legislation and elsewhere.

Although the Board's purview does not encompass all matters that may be related to nature and environment, it still covers some pretty wide territory. The Board is required to adjudicate any item of business relating to nature conservancy, water and air pollution, outdoor sanitation, the mobile outdoor life, hunting and game management. The Environment Protection Act also empowers the Board to hear certain disputes and to ensure compliance not only with this law but also with the Act on Products Hazardous to Man and the Environment. Further, the Board directs and promotes applied ecological research and study projects.

The Swedish National Environment Protection Board is also active in the field of

environmental education. It cooperates closely with the Swedish National Board of Education in the development of conservation awareness programmes. Recently, the two Boards conducted a seminar on environment and education methodology and training for over 800 Swedish teachers. In addition, the Swedish National Environmental Protection Board sends out a quarterly environmental newsletter to schools in Sweden.

The Skansen Foundation, Zoological Department is a member active in wildlife conservation. Founded in 1891 the Skansen foundation is principally a cultural open air museum with a zoopark (the Zoological Department) and entertainment grounds as important side activities. The principals of the foundation are the Swedish State and the City of Stockholm. The Zoological Department specializes in Scandinavian fauna.

Skansen has been involved in fauna preservation for a long time. Among its earliest achievements was the active participation in re-establishing a free-living population of the European bison, which was totally wiped out from its last stronghold in Poland after the First World War. Similarly, in the last ten years, the Foundation has aided in the restoration of a breeding population of the eagle owl in the southwestern parts of Sweden by donating some 30 captive-bred young which were re-introduced into that area. Of the species presently regarded as vulnerable or threatened in Scandinavia, the arctic fox, the wolverine, the wolf, the lynx, the otter, the grey seal, the harbour seal and the white stork are kept at Skansen. The Foundation keeps a studbook for Fennoscandian wolves in captivity and participates in projects for captive breeding of the otter and wolverine.

IUCN member, WWF Sweden aims to financially support scientific research, education and information, the establishment of nature reserves and efforts to preserve endangered plant and animal species. It cooperates with authorities, non-governmental organizations and private individuals in this area. WWF Sweden has raised about 18 million Swedish crowns for conservation and supports 82 conservation projects in Sweden.

IUCN member, the Royal Swedish Academy of Sciences is an independent, non-governmental scientific organization that carries on and supports research activities throughout Sweden and in selected other locations around the world. It has a long and distinguished history having been founded in 1739. The Academy receives support in the form of gifts and grants from private foundations, from individuals and from the Swedish government. It has always been at the forefront of Swedish scientific life. The responsibility for Nobel Prize selection in Physics, Chemistry as well as Economic Sciences has been vested in the Academy.

The Academy presently runs six scientific institutes. Of particular interest for conservation are the Abisko Station and the Bei-

*Continued next page*



jer Institute. The Abisko Natural Science Research Station acquired by the Academy in 1939 is situated in the extreme north of Sweden above the Polar Circle and is mainly concerned with subarctic mountain ecology. The International Institute for Energy and Human Ecology (The Beijer Institute) was founded in 1977. Its aim is to carry out research on long-term issues of international importance concerned with man's use of energy and the impact of energy utilization on the environment.

IUCN members in Sweden are in the forefront of the battle for conservation in their country. While it is unfortunately impossible to summarize their many achievements in this brief overview, it is necessary to note that without their efforts in many diverse and needed fields the prospects for the natural environment in Sweden tomorrow would be nowhere near as hopeful as they are today. □

## IUCN Members in Sweden

The Swedish Environmental Protection Board  
Royal Swedish Academy of Sciences  
Skansen Foundation, Zoological Department  
Swedish Forest Service  
Swedish Ornithological Society  
Swedish Museum of Natural History  
Swedish Society for the Conservation of Nature  
Swedish Sportsmen's Association  
World Wildlife Fund Sweden

## New Parks for Chile

Chile has recently established two new national parks: Alerce Andino in the Province of Llanquihue with 39,255 ha and Chiloé in the Province of Chiloé with 43,057 ha. Chiloé National Park is on Chiloé Island, the site of the southernmost settlement of the Spaniards during their colonization of Latin America. The park will protect a number of species including the marine otter. The Alerce Andino National Park will protect one of the few areas in the country where False larch can be found. Alerce has been heavily exploited in the last century after the southern part of Chile was colonized due to its very valuable wood.

## Conservation Course

**Wildlife Management and Protected Areas** is a new course organized by l'Ecole Nationale du Genie Rural des Eaux et des Forêts and Le Centre International des Hautes Etudes Agronomiques Méditerranéennes. It is aimed at presenting the latest theories and practice in conservation to administrators, specialists and to students with a strong background in related scientific disciplines. It includes both classroom and field work. For more information, please write to: E.N.G.R.E.F. Domaine de Lavalette, Avenue du Val de Montferrand 34100 Montpellier, France.

*Continued from page 59*

the codes for those botanic gardens affiliated to the CMC's Botanic Gardens Coordinating Body which have specimens of threatened taxa.

The animal data files contain information on some 3500 taxa which are either in the relevant Red Data Book, are protected by CITES or have been assessed in the course of other CMC projects (e.g. the reviews of threatened animals of the EEC and of Madagascar). The data are stored in two main parts, that which applies to the taxon world-wide and that which applies within each CMC area in which the taxon is found. The world-wide data consist, amongst other things, of the taxon's world conservation category (or Red Data Book category), the types of threats which the taxon faces, the ways in which man exploits the taxon, an estimate (if available) of the population size and trend, whether CMC has a data sheet about the taxon, whether the taxon is in captivity and if so, the captive population size and whether it is bred in captivity, and finally whether the taxon is protected by CITES. The distribution data comprise the following information for each area within which the taxon is found: area conservation category, local population size and trend (if available), and whether the taxon is on the local endangered species list, is protected by law or is found in reserves or national parks. The information on protection by law and presence in protected areas is in the form of links to the IUCN Environmental Law Centre database in Bonn and the protected areas section of the CMC database.

Data on some 4500 national parks and protected areas are held in the protected areas section of the CMC database. The data include area name, country, size, date established, management category and biogeographic classification (following the Udvardy scheme) of the area. Amongst other things, these data have been used, to produce the **UN List of National Parks and Protected Areas**. One of the aims of the protected areas database is to be able to assess whether all bio-geographic realms are equally well protected by the world's growing network of protected areas; preliminary assessments of this type have been made and have led to recommendations for extensions to the protected areas system.

Wildlife trade data reported by Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) are analysed by CMC under contract to the CITES Secretariat. The trade data files and associated programmes allow an estimation of the volume and trends of international trade in endangered species and the automatic comparison of trade reported between CITES Parties. In an ideal world, all transactions between two CITES Parties would be reported identically by both Parties, however this does not happen and the comparative tabulations allow an assessment to be made of the reasons for some of the discrepancies.

Supplementing the main database divisions outlined above, there are various

other files which contain data applicable to many or all of the activities of CMC. These files include a projects database which has recently been developed to hold and analyse information both on conservation projects proposed and on those in progress. Initially, the projects database will contain data on mammal and bird projects and has been developed in co-operation with WWF and ICBP. Obviously with scarce conservation funds it is essential to ensure the minimum duplication of effort and resources and the projects database will help to identify areas of project overlap and gaps in the current conservation effort. Details of the type of project, type of personnel required, funds required, location of project, taxa and protected areas to which the project is relevant are stored for each project.

CMC gathers much of its data from two main sources, firstly an international network of experts and secondly from published scientific literature. Currently the addresses of CMC contacts are stored in manual card systems, but these will soon be converted to computer files which will allow a more rapid selection (and possibly mailing) of all contacts who may be able to help on any given problem. Each name and address will be entered together with details of that person's taxonomic and geographical expertise.

Information on publications relevant to the work of CMC will be entered into a bibliography database, a trial version of which is currently handling references relevant to plant conservation. As with addresses, each reference will be stored together with details of the taxa and geographical areas to which it is relevant. This system will then be used to produce the reference lists for CMC publications, saving much valuable time since citation details for each reference need only be typed and checked once rather than every time the reference is cited in different reports.

Much remains to be done, both in terms of collecting and entering data into the database and in terms of computer programming to extend and enhance the database facilities. However, the usefulness of the database is already becoming apparent. It has, for instance, been used as the basis for assessing the priorities for the forthcoming WWF/IUCN Plants Campaign. Thus it can be seen that, as a tool to help monitor the conservation status of animals, plants and protected areas the CMC computerised database is essential. With it, more information can be processed more rapidly and in many more different ways than would be possible without the aid of a computer. Therefore, the future course for conservation can be plotted with greater sophistication and accuracy, thus ensuring that IUCN and others can make increasing progress towards achieving the aims of the **World Conservation Strategy**. □

*Duncan Mackinder is a computer scientist and zoologist working for the IUCN Conservation Monitoring Centre and is currently based at the Centre's office in Kew.*



# IN MY OPINION

## THE SPIRITS OF BALI

**Dr Marius Jacobs** died in April (See Obituary). Among his last work in conservation was this article prepared for the *IUCN Bulletin*. This reflective essay examines trends in conservation. It was sparked by discussions at the World National Parks Congress held in Bali, Indonesia in October 1982.

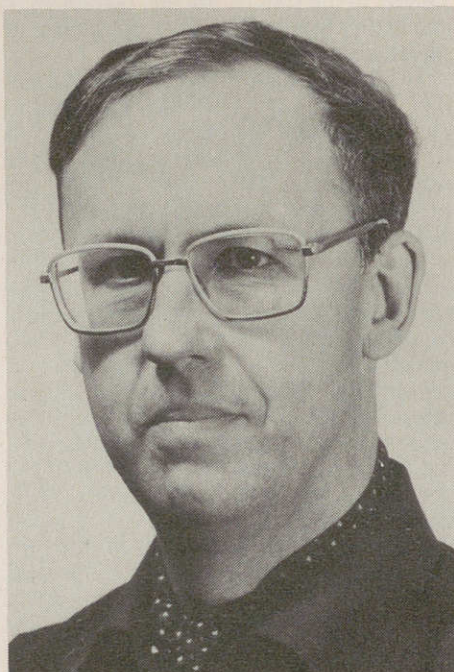
IUCN "is dedicated to the wise use of the Earth's natural resources and to the maintenance of the Planet's natural diversity". What to think of the sequence? Use first, maintain second? And this comes from the International Union for Conservation of Nature and Natural Resources?

Something, too, has happened to the term *conservation*. In the brochure of IUCN's Conservation for Development Centre, the word is defined as "managing our use of the environment to ensure maximum benefits for man — present and future". This sounds rather more like an intention to conserve man than to conserve nature. So we are less surprised to read about plans (*IUCN Bulletin* Oct/Nov/Dec 1982, p. 81) to change the name of IUCN into something like World Conservation Organization. Nature is to be eliminated from the name.

Wise utilization is certainly possible to a much greater extent than now practised in ecosystems that are not inherently stable and with an abundant supply of minerals (like some savannas and coastal waters). It must be said that in tropical rain forests the margins are so narrow as to be non-existent for practical purposes. There are too many woody, long-living species, large animals are needed for seed dispersal, the soils are generally too poor. Any illusion that tropical rain forests can be exploited on a permanent basis (otherwise than through seed collection) is misleading. And tropical rain forests contain roughly half the species on earth. Feeding illusions about exploitability of these systems amounts to sowing a path to disaster.

Fortunately, some clear voices can be heard. "Planning and management cannot provide a solution to the basic conflict between pressures for the development of resources, and the conservation of wilderness, which is the essence of the present situation in Tasmania", concludes Peter Bosworth in *Ambio* (XI, No.5, 1982, p. 273). "They cannot because there is no solution. These two uses are incompatible. Tasmania needs to decide if it wants to maintain such remaining wilderness areas or develop them. If it decides to maintain them, then resource development cannot proceed in these areas".

What makes IUCN a unique organization is its world-wide network of experts in conservation (in the old sense of nature protection). Its six commissions enlist considerable scientific manpower. This enables IUCN to act as the world's environmental conscience. No organization is better equipped to speak the truth on environmental matters according to scientific



*Dr Marius Jacobs (1929-1983)*

Credit: Ben Kieft, Rijksherbarium

standards derived from those same matters. The truth may sometimes indeed be unwelcome to economists; if ignored, it will make itself felt later, harder. So if IUCN starts to generate ideas about 'sustainable development' without solid scientific backing, it is risking its reputation, and endangers the very 'nature' it previously aimed to protect.

We can be reasonably sure that any opening in the defense of nature will be widened by exploiters, any promise of 'utilization' will result in claims under the most far-fetched pretexts. Now that management includes planning, nothing can be wrong with management; if 'conservation' is stretched enough it includes 'development', and requires 'the benefit of man' as a new justification. However, the benefit of man knows no limits; in the new circumscription, conservation may be redefined for the benefit of the only animal whose needs are infinite, whom all others must serve.

It seems therefore necessary to be a bit critical before hailing a concept in the name of which such monumental ecological blunders have been made. This provision, to be sure, has been made in the 6-point Bali Declaration: "... and, where compatible with the protected area's objectives, access to resources".

The Bali Declaration is a constructively worded paper — except that the genuine rights to exist are not extended to plant and animal species. Thus doubt remains. Where will IUCN stand in case of conflict? And conflicts between man and nature are sure to worsen. And what will IUCN do in case of doubts?

Hermien Hadiati Koeswadji of Airlangga University put this last problem into compelling words: "If a mistake is made (in management), it must be in favour of natural ecosystems and functions, rather than in favour of man's alterations of such systems.... The necessity to err in favour of nature and natural processes is a pill that many economists find too bitter to swallow. They argue that failure to utilize resources now retards the rate of economic growth. The ecologists argue, however, that it is precisely this conservative attitude that preserves options for future generations. If one errs against nature, one closes one's options all too rapidly".

It is to be regretted that a current in IUCN lent itself to the common trend in western civilization to discriminate against everything that is not man as a matter of course. Nature must be employed in the service of man — as if not all species of animals and plants have a right to exist no less than humans. Here we come to the lack of vision: throughout, man is presented as the one who is entitled to the benefits of nature. In the (here prevailing) IUCN view, it seems to be man's role to take from the earth. The idea that man has obligations towards nature, that man has the duty of respect and restraint in his dealings with nature, is sadly missing. No vision has been forthcoming from IUCN — as far as I am aware — which could inspire man towards a higher principle than reaping benefits. In my view as a humble ecologist, man and nature have a common destiny, which reaches across thousands of years. If we have indeed borrowed the earth from our children, is it not man's finest task in life to serve and beautify the earth, a really super-human goal? I think IUCN cannot afford to ignore these matters. A poor vision attracts poor minds. People will turn away from IUCN because they find the ceiling too low.

Any vision on conservation which does not acknowledge, first and foremost, the rights of animal and plant species to exist *ad finitum*, will lead to a dead end, along a path of misguided reasoning. One example is the well-known tiger dilemma: are we justified in protecting a few tigers while thousands of humans go hungry?

The question is a little warped. It ignores a whole history of false expectation, namely that increase of human numbers, of 'the needs of countries', of 'maximum benefits for man', could go on forever. It presumes that conversion of wilderness would bring the definite solution of hunger. The question thus harbours a double standard of time. Population pressure is viewed as a sudden phenomenon without much relation to past and future, on the one hand, and problemless times are tacitly predicted for those people on whose behalf the tigers are to be eliminated, on the other.

This double standard is concealed in the slogan 'Conservation for Development' as well. Conservation deals in ages. A millennium is a trifle. Few people realize that it



took 35,000 millennia for the dipterocarp forests of the Malayan region to evolve. Or that agriculture exists for less than half the time it takes a herb species to evolve from another species. The process to which all creatures owe everything, evolution, is the one to protect in the very first place. The World Conservation Strategy speaks of maintaining genetic diversity and the essential ecological processes, but scarcely about the underlying, more comprehensive process of evolution. Here is a weak spot. And we have no way to influence evolution except negatively; we just have to wait, millions of years, and see what comes out of it. Now in development, everything is hurried. Five years is the common span, the more ambitious projects take ten, some daring projections reach across twenty — and not much further. 'Conservation for Development' then means the intention to subordinate the permanent to the temporary. Nature, which exists and maintains itself in extremely slow processes, hitherto allowed to go on in protected areas, is to be subjugated to development: rampant processes which a few humans can set in motion but fewer humans are able to stop.

The time scales of nature and of man are indeed hopelessly incompatible. The ecological ruins, so aptly described in the book by Farvar & Milton, *The Careless Technology* (1972), testify to just this incompatibility. Effort can and should be made to make technology more careful. Some incompatibility can be avoided by judicious management. But in case of a choice, where will IUCN stand? The truth in conservation has always been: protect nature. From what? Of course, from *Homo sapiens*. It is as simple as that. *Homo sapiens* and *Panthera tigris* are both, as species, entitled to citizenship of this earth. If the tiger is endangered because of man's progress, it is time for man to recede. And while there is much to be regulated in the margin, it will always be... well, in the margin.

But will this be politically acceptable? Again, the double standard is ready to fool us. Does IUCN not have in the first place the task to guide people, to shape their thoughts, that is, to be ahead of them? Or is it to be guided by political considerations which, naturally, are always ages behind current ideas, since ages must elapse before a majority has been reached?

In practice, IUCN tries both. But we are talking here about emphasis in the conduct of daily affairs, and of clear choices only in the hour of truth. □

## CALENDAR

The **Fourth International Seminar on Environmental Impact Assessment** will be held at the University of Aberdeen 17-29 July. The seminar is organized by the Project Appraisal and Planning Unit at the University of Aberdeen and is sponsored by the World Health Organization with support of the United Nations Development Programme. For more information contact: University of Aberdeen, Depart-

ment of Geography, High Street, Old Aberdeen AB9 2UF, UK.

A **Conference on Ecological Impacts of Outdoor Recreation on Mountain Areas in Europe and North America**, will be held at Brathay Hall, Ambleside, Cumbria, 9-12 September. This important conference will bring together a wide range of speakers from both sides of the Atlantic. There will be sessions on the growth of mountain recreation and research on impacts and experiments in management. Further details from: Graham Barrow, R.E.R.G. Conference, c/o Ash Environmental Resource Consultants, 90 Mitchell Street, Glasgow, Scotland, G1 3NL.

An **International Symposium on Economics of Ecosystem Management** will be held at the Cassandra Palace Hotel, Cassandra, Halkidiki, Greece 26-30 September. The symposium is organized in collaboration with the Commission of European Communities, the Organization for Economic Cooperation and Development, the Ministries of Environment and Culture of Greece and the University of Thessaloniki. For more information please contact: Laboratory of Ecology, Faculty of Physics and Mathematics, University of

Thessaloniki, University Post Box 119, Thessaloniki, Greece.

The **Ninth Latin American Zoological Congress** will be held in Arequipa/Peru 9-15 October. The Congress will seek to update zoological knowledge at the scientific and professional level and to discuss aquatic and terrestrial fauna problems in the Latin America. Contributions are expected from scientists from most of the Latin American and Central American countries. During the Congress, excursions will be made to the Altoandina as well as to the coastal hills and the coastal Laguna Mejia. For further information please contact: Universidad Nacional Agraria, Comision Permanente de los Congresos Latinoamericanos de Zoologia, Apartado 4796, Lima 100, Peru.

The **Fifth Biennial Conference on the Biology of Marine Mammals** will be held in Boston from 27 November to 2 December under the aegis of the Society for Marine Mammalogy. The Conference will be held at the Westin Hotel. Inquiries may be addressed to: John H. Prescott, New England Aquarium, Central Wharf, Boston, Mass. 02110, USA.

## OBITUARIES

### Dr Marius Jacobs

When Dr Marius Jacobs died unexpectedly on 26 April 1983, international conservation lost one of its most active and irreplaceable leaders.

Born on 19 December 1929 in Rotterdam, the Netherlands, he was educated at Leiden University where he took his degree in plant taxonomy in 1955. From 1955-1958 Marius Jacobs served on the staff of the Herbarium Bogoriense, Indonesia and was subsequently appointed to the Rijksherbarium, Leiden, Netherlands. Field work took him to Sumatra (1956 and 1968), East Java (1957), Borneo (1958), Western Iran (1963), Luzon, Philippines (1968), Eastern New Guinea (1973), S.E. Celebes (1978), Rio Negro, Brazil (1982) and Surinam (1982).

With his background in taxonomic botany he was a world expert on tropical rainforests. As one of the most active members of the IUCN Commission on Ecology he served as Honorary Secretary of its working group on tropical rain forests. He was deeply involved in its work and responsible for many of its achievements. In those capacities he was also one of the principal advisers to the World Wildlife Fund — Netherlands.

In 1981, Marius Jacobs published a book in the Dutch language entitled *The Tropical Rainforest — A First Introduction*. He was also the Editor of the *Flora Malesiana Bulletin*, one of the most outstanding publications of the Malay Archipelago and adjacent regions.

Dr Marius Jacobs was also active in introducing ecological principles into

development aid projects. He was the Secretary of the Ecology and Development Group of the Netherlands Commission for International Nature Protection, which persuaded the Dutch Government to apply ecological considerations in their overseas development policy.

For those who had the privilege of knowing him well his death comes as a great personal loss. In international conservation, Dr Jacobs will be long remembered for his outstanding achievements.

Maarten Bijleveld

### General (Res) Avraham Yoffe

General Avraham Yoffe died on 11 April, 1983 after a long illness. An outstanding military leader as a tank commander in the Yom Kippur War in 1967, General Yoffe was also one of Israel's outstanding conservationists. He was head of the Nature Reserves Authority of Israel, a Government Agency member of IUCN. General Yoffe was instrumental in the creation of the Hai-Bar Biblical Reserve north of Eilat. Thanks to his immense drive and initiative, a number of species which were driven to extinction in many areas of the middle east were re-introduced in Israel including the Onager, the Persian Fallow Deer, and the Arabian oryx.

Through his efforts Israel today possesses a network of nature reserves where a large part of the fauna of the middle east is preserved. For his dedication and lasting conservation achievements, General Yoffe will be much missed by his many friends around the world.

Maarten Bijleveld



# WORLD WATCH

## A New Set of Teeth in the Caribbean

The Caribbean Action Plan has finally cut its legal teeth in the form of a framework Convention and a Protocol on oil spills.

Meeting in Cartagena, Colombia 21-24 March, 17 Caribbean Governments and the European Economic Community agreed unanimously on the text of a Convention for the Protection and Development of the Marine Environment of the Wider Caribbean region, and a Protocol on co-operation in combating oil spills. Immediately after the Conference, 13 countries formally signed both agreements. The EEC signed the Convention only and decided to consider the Protocol at a later date.

Only Costa Rica, Cuba, Guatemala and Trinidad and Tobago did not sign, explaining that while approving the agreements, they could not sign them on-the-spot for various technical, juridical or constitutional reasons. Cuba, for example, explained that its signature will constitute ratification as well. Nine countries must ratify before the treaties enter into force.

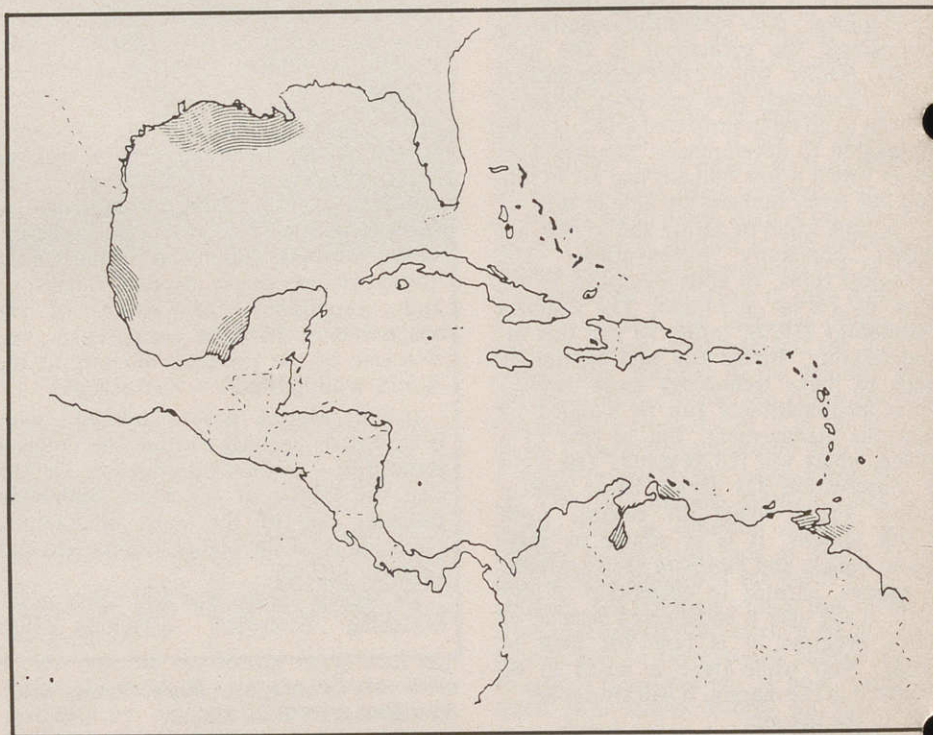
The preamble of the Caribbean Convention declares that signatory states are "conscious of their responsibility to protect the marine environment," "recognize the special hydrographic and ecological characteristics of the region and its vulnerability to pollution," "recognize further the threat to the marine environment, its ecological equilibrium, resources and legitimate uses posed by pollution and by the absence of sufficient integration of an environmental dimension into the development process", and "consider the protection of the ecosystems of the marine environment of the Wider Caribbean to be one of their principal objectives."

Major sources of pollution specified in the Convention are "pollution from ships, pollution caused by dumping, from land-based sources (such as) coastal disposal or by discharges emanating from rivers, estuaries, coastal establishments, outfall structures, pollution resulting directly or indirectly from exploration and exploitation of the sea-bed and its subsoil, (or) from discharges into the atmosphere."

Signature of the Convention is but one important and gratifying accomplishment in a series of events which began in 1976 when Caribbean governments requested the assistance of the United Nations Environment Programme in assessing the environmental situation in the region. That same year IOC, FAO and UNEP sponsored a workshop in Trinidad on marine pollution. In 1977 a joint ECLA/UNEP project was launched to draw up an action plan for the region in co-operation with Caribbean governments. Sectoral overviews were prepared by 10 international and regional organizations, including IUCN, which assessed the relationship between environment and development in energy production and consumption, agriculture and fisheries, human health, human settlements, coastal area development, natural disasters, marine pollution and conservation. These studies formed the basis of the Action Plan for the Wider Caribbean

adopted in Jamaica in April 1981. Sixty-six projects were defined, of which eight were chosen by the Caribbean States. These include watershed management, oil spill control, public awareness campaigns and environmental impact assessment. Work began on these in 1982, and experts have listed another 25 to be given high priority. The Jamaica meeting designated UNEP as secretariat for the action plan.

The Cartagena Conference was attended by Colombia, Costa Rica, Cuba, France, Grenada, Guatemala, Honduras, Jamaica, Mexico, the Netherlands, Nicaragua, Panama, St. Lucia, Trinidad and Tobago, the United Kingdom, the United States, Venezuela and the EEC. It was organized by UNEP as part of its Regional Seas Programme for the Wider Caribbean.



High risk zones for oil spills in off-shore areas in the Wider Caribbean. Source: IMCO, 1979

## Council of Europe Banks on Conservation Campaign

The Council of Europe has launched a campaign for the conservation of river, lake and sea banks due to the growing threat of industrial and urban encroachment on their fragile ecosystems. A number of specialized studies and seminars on the subject have led to the adoption of two Resolutions by the Council on the protection of lake, river and other shore-lines. A Conference on the subject is planned for 1984 and private organizations are encouraged to call public attention to the growing problem.

## Communication Scholarship Established

A scholarship to help bridge the gap between natural resource management and communication has been established at the University of Idaho, beginning with the 1983-84 academic year. Dr James R. Fazio, professor and head of the Depart-

## Baby Aye-Aye Discovered in Wild

The first baby aye-aye to be seen in the wild for more than a decade has been sighted in a nature reserve on the island of Nosy Mangabé off the north east coast of Madagascar. Several aye-ayes were transferred from Madagascar to the reserve for protection nearly 20 years ago. The sighting of the aye-aye is significant as it points to the fact that the translocated aye-aye are breeding. The discovery was made by Mr. André Peyriéras, a naturalist with a particular interest in lemur research who was responsible for the original translocation. The aye-aye, the rarest of the lemurians, and endemic to Madagascar has been hovering on the brink of extinction for many years. (WWF-News).

ment of Wildland Recreation Management, has donated the royalties from his book, "Public Relations and Communications for Natural Resource Managers" to endow a fund to provide one or more \$500 scholarships each year to University of Idaho students enrolled in the College of Forestry, Wildlife and Range Sciences who have demonstrated an interest in public information and education and are willing to take coursework in communication before they graduate. For more information contact: University of Idaho, College of Forestry, Wildlife and Range Sciences, Moscow, Idaho 83843, USA.

## First Marine Park for Brazil

The first marine park in Brazil, the Parque Nacional Marinho dos Abrolhos (Abrolhos Marine National Park) has been recently established. It is located in a coral reef region near the Bahia State coast and is subdivided into two areas covering about 266 square nautical miles.



## China: Solving Environmental Problems

Severe strain between environment and man is nothing new to China. The past 30 years in China have been dominated by industrialization and population growth. Between 1950 and 1979 the national income grew at seven per cent per annum and industrial output grew annually at about 13 per cent. Today China is a major world producer of iron and steel, oil, coal, cotton goods, radio and bicycles.

Part of this progress has been attained by the establishment of new industrial cities — notably in northwest China. The urban population is probably now between 150 and 200 million, a four-fold growth since 1950. This has caused acute environmental problems. In major Chinese cities, air pollution readings are often up to ten times American or European levels. Factory effluent, solid waste disposal and recycling activities are very variable. These problems have been attacked by selective investment in water control and by mass campaigns and educational drives to improve environmental health generally. The effectiveness of these measures has depended to a considerable extent on local attitudes and on local variations in the resources available to tackle the problems.

In spite of the successes in fertility reduction in the 1970s, the population of China has doubled since 1950. To feed this population, the industrial revolution has been accompanied by the beginnings of an agricultural revolution. In the 1950s, additional agricultural output was secured mainly by the intensification of traditional methods. Subsequent growth has required mechanization, the application of modern pesticides and fertilizers, and ambitious schemes for water control, land reclamation and reformation. In the past 20 years, policies were designed to encourage the extension and intensification of grain crops at the expense of other crops, forestry and of grazing lands.

The impact of many of these policies on China's ecological balance has been severe. Deforestation, use of chemical pesticides, technically ill-advised land reclamation and water conservancy schemes have produced negative effects, even in terms of grain output (for food and fodder) and have had secondary effects in terms of loss of other crops, of grazing land and wildlife. Overfishing has led to declining fish catches both from the sea and from fresh water lakes. Specific mass efforts such as the 'elimination of pests' campaign resulted in the destruction of large populations of birds producing insect invasions and other predictably disastrous ecological imbalances. Tigers and other large predators were on the pest list, and the campaigns were often so successful that a number of species of wild animals are now in danger of disappearing due to these programmed elimination policies of the 1950s and 1960s.

In the past three to four years, Chinese ecologists, scientists and economic planners have begun to take seriously the relationship between economic development and ecological and environmental conditions.



*In spite of the successes in fertility reduction, the population of China has doubled since 1950.*

*Credit: Nancy Nash*

Measures to handle these problems are underway. Population policy remains central to the effort to keep the balance between demand and supply of resources within reasonable limits. In the 1970s China has encouraged 'one child families.' Related to this is an urban policy that encourages the growth of small and medium rural-oriented cities, while discouraging the growth of larger cities. Broad ecological factors are now reflected in basic economic decisions. In agriculture, policy now emphasizes the need to put grain into a broader balance with non-grain crops, animal husbandry, fish and, above all, forestry. Current policy also emphasizes biological rather than chemical approaches to pest and disease control.

New considerations are also visible in industrial policy. The general slowdown of the 'readjustment' period and the switch from heavy to light industries will have favourable environmental consequences. Individual projects are being closely examined for their overall ecological effects. New industrial policies are intended to be less energy-intensive and hence should enable China to slow the extraction of non-renewable energy sources. Simultaneously the Chinese are exploring a wide range of other energy sources. Notably successful has been the development of new techniques for production of biogas for domestic heating and cooking. Six million biogas digesters have been built in rural areas, used by 35 million people for fuel, lighting and processing farm produce.

In the area of wildlife conservation, the

elimination campaigns have found conservationist counterparts. For example, in 1982, China launched a nationwide 'Love the Birds' campaign. Other similar efforts include public education campaigns such as a nationwide 'Conservation Education Week' carried out in China's schools in 1980. Last year China announced that 85 nature reserves and eight protected areas for birds have been established. A total of 274 reserves are to be established by 1984, covering about one per cent of China's land area.

China has established some new specialized agencies for environmental work, and has published major laws covering environmental protection generally, forestry and fisheries. The main central department is a new Ministry of Urban and Rural Construction and Environmental Protection set up last year to replace the Environmental Protection Office. Environmental protection was formally included in the Chinese Constitution in 1978.

China seems to be seeking a way in which modern, science-based economic progress can be reconciled with sound ecological policies. If these objectives can be reconciled, China can become a model for other developing countries interested in their policies and in the way they work. □

*This article is based on "China — Third World Model?" by Christopher Howe, published in People, Volume 10, Number 1, 1983 and on a manuscript submitted to IUCN by Nancy Nash, Consultant, WWF Hong Kong.*



# WORLD WATCH

## Asean: Conservation Priorities

by Amado S. Tolentino, Jr

The Asean region, covering the land and territorial waters of Malaysia, Indonesia, Philippines, Singapore and Thailand, encompasses one of the most important ecological regions of the world. It has a large number of plant and animal species particularly those confined to the Sundaic (Malaya, Java, Borneo and Sumatra) and Wallacean (Philippines, Sulawesi, Mollocas and Lesser Sundas) areas. Along with the fact that the area is endowed with diversified and rich coastal zones and foreshore, the Asean region possesses a tremendous store-house of living natural resources, a high proportion of which has great economic potential.

Aware of its responsibilities, the Asean, in a series of meetings, notably the Asean Workshop on Nature Conservation held in Denpasar, Indonesia (1980) and the First Meeting of Asean Experts on Nature Conservation held in Singapore (1982) identified priorities of concern for co-operation and action. Those are: inventory of ecosystems, critical areas and habitats, a network of Asean heritage sites and the establishment of Asean information, training and research and management centers. In conjunction with those priorities, an integrated Asean Action Plan on Nature Conservation was adopted (except its legal component) which will complement and strengthen national conservation efforts.

The inventory of ecosystems has for its objectives (1) the identification of ecosystems, critical areas and habitats that require regional conservation action; (2) identification of the type of conservation measures that are needed and (3) establishment of a regional mechanism to implement the conservation measures. Referred to in particular in this priority are the terrestrial ecosystems along the mountainous border between Kalimantan (Indonesia) and Sarawak and Sabah (Malaysia), the marine ecosystems in the Turtle Islands in the Sulu area between Malaysia, Philippines and Indonesia and the coastal habitats bordering the Straits of Malacca.

In order to ensure maintenance of essential ecological processes and at the same time provide in-site conservation of plant and animal genetic resources, the Asean is in the process of establishing a network of heritage sites as national parks, biosphere reserves, nature reserves or wildlife sanctuaries. So far, the following are the identified Asean Heritage Sites: Malaysia — Mulu National Park (Sarawak), Kinabalu National Park (Sabah), Taman Negara and Endau-Rompin National Park (Peninsular Malaysia) and Krau Wildlife Reserve (Pahang, Peninsular Malaysia); Philippines — Mts. Iglit-Baco (Mindoro) and Mt. Apo (Davao); Thailand — Khao Yai National Park and Tarutao National Park (Southern Thailand).

Those sites, regarded of regional importance and meeting regional criteria but possibly in many cases not meeting criteria of global importance, are known to have the best examples of all major biotypes in

the region. The establishment of the network, it is hoped, will conserve their ecosystems and constituent life. A publication is currently being prepared with the assistance of UNEP on their special features and management plans and programmes to protect the sites including their natural renewable resources.

The Biotrop (Asean Regional Centre of Tropical Biology) in Bogor, Indonesia, had already been designated as the Asean Information Centre. It will undertake a study of the various needs of information exchange including the need to coordinate all Asean publications on nature conservation and to work on the possibility of an Asean newsletter.

At the same time, Indonesia offered the School of Environmental Conservation and Management in Ciawi to be the Asean Training Centre on Nature Conservation. The institute aims at providing properly trained park warden/superintendent level personnel in the implementation of management programmes and the organization of protection measures and law enforcement activities. Should it be finally chosen as the region's training centre, it will play a prominent role in the realization of a training programme for a new generation of personnel capable of putting the Asean countries conservation programmes into full effect. It can also serve as the centre for coordinated curriculum and handbook/guidelines development for other categories of park personnel.

In the meantime, Indonesia is undertaking a survey of the training requirements of the Asean countries to see if the existing syllabus in the School of Environmental Conservation in Ciawi meets the needs of the Asean countries.

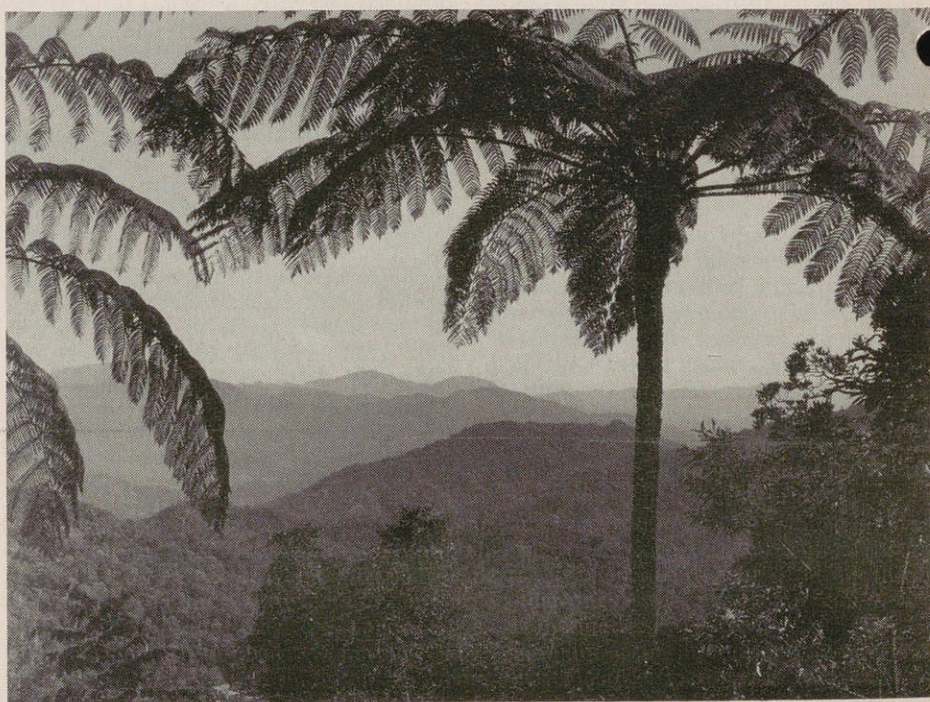
As to the Asean wildlife, research and management centre, Malaysia is suggesting

its Kuala Lumpur Research Centre in the Krau Wildlife Reserve in Pahang. Facilities and disciplines at the Centre cater broadly to the following research fields: food habits and analysis, reproduction, parasitology, population studies, habitat requirements, diseases, taxonomy and ecology. The Asean centre when fully operational is expected to provide consultation in the management of different species and serve as an operation centre for implementing, on a pilot scale, identified wildlife conservation schemes. It will also emphasize environmental consideration as a guideline in wildlife management practices including education on wilderness value.

At the moment, however, each of the Asean countries is encouraged to develop its respective research and management centres first and the matter of choice of the Asean centre is to be reviewed and taken up later when the national centres have achieved a certain degree of expertise or specialization considering the large number of wildlife in the region.

The use of a legal instrument to support, strengthen and coordinate the implementation of an Action Plan for a uniform and comprehensive approach to nature conservation is well acknowledged. In this regard, a meeting of legal and technical experts of the Asean States was held in Manila from 4-6 November 1982 to review the draft Asean Convention on Nature Conservation which uses the ecosystem approach, emphasizes regional concerns and was drawn up to compliment CITES.

*Amado S. Tolentino, Jr. works as a legal consultant to the National Environmental Protection Council of the Philippines and is a member of IUCN's Commission on Environmental Policy, Law and Administration.*



*The Asean region possesses a tremendous store-house of living natural resources. This montane rainforest in Malaysia is an example.*

Credit: Ken Scriven/WWF



## MAB's International Biosphere Reserve Network Grows

At the last session of the Bureau of the International Co-ordination Council of Unesco's Man and the Biosphere Programme (MAB), on 19-21 April, 12 new biosphere reserves were included in the network. These are: Reserva de la Biosfera 'Araucaris' (Chile); Réserve naturelle intégrale d'Ipassa-Makokou (Gabon); Bia National Park (Ghana); Parc national de la Comoé (Ivory Coast); Darien National Park (Panama); Parc national des Volcans (Rwanda); Reserva de la Biosfera del Canal y los Tiles (Spain); Reserva de la Biosfera de la Marismas del Río Odiel (Spain); Reserva de la Biosfera de las Sierras de Cazorla y Segura (Spain); South Atlantic Coastal Plain Biosphere Reserve (USA); Central Gulf Coastal Plain Biosphere Reserve (USA); California Coast Ranges Biosphere Reserve (USA).

Furthermore, upon the request of the United States of America, two biosphere reserves in the Hawaiian Islands, Haleakala National Park and Hawaii volcanoes National Park were combined into one biosphere reserve cluster to be known as the Hawaiian Islands Biosphere Reserve.

With the addition of the new biosphere reserves listed above and the combination of the two Hawaiian sites into one cluster, the international biosphere reserve network now consists of a total of 226 reserves located in 62 countries.

## New Environmental Law for Italy

On 20 December 1982, the Italian Parliament passed a law providing for a series of actions to combat and eliminate coastal and marine pollution. Several billion lire will be earmarked for supervisory equipment (boats and helicopters) and to set up a coastal monitoring network. The law also sets up an emergency action system to cope with accidental pollution. The law lays down heavy penalties for oil tankers causing pollution outside territorial waters: up to two years imprisonment for the captain and owner, as well as fines of up to ten million lire. Eight sections of the new Act deal with the 20 marine reserves to be set up to protect areas of special interest. (*Council of Europe Newsletter*).

## New Latin American Conservation Group

In May, 1982 in Nairobi, representatives from nine Latin American countries formed the Federación Latinoamericana y del Caribe de Asociaciones Ambientistas to coordinate efforts of diverse environmental groups in the region and to plan joint conservation action. The group was formed during the NGO Symposium on the Environment held in conjunction with UNEP's Ten Years After Stockholm activities. For more information, write to Yolanda Kakabadse, Directora Ejecutiva, Fundación Natura, Jorge Juan No 481 y Mariana de Jesús, Casilla 243, Quito, Ecuador.

## Mweka Celebrates 20th Anniversary

The College of African Wildlife Management, Mweka, celebrates its 20th birthday

## Position Available

## DIRECTOR OF CONSERVATION PROGRAMME DIVISION

### World Wildlife Fund

World Wildlife Fund is an international conservation foundation with 24 National Organizations on five continents. WWF-International has a small, but highly qualified staff, which co-ordinates and serves the National Organizations, and which co-operates closely with the conservation community, most notably the International Union for Conservation of Nature and Natural Resources (IUCN) with which it shares headquarters in Gland, Switzerland. WWF-International comprises six divisions: Fundraising; Conservation Programming; National Organizations Relations and Development; Public Affairs; Information and Education; and Finance and Administration.

The Director of the Conservation Programme Division will return to Denmark in October 1983 after a three-year secondment to WWF-International. A new Director is therefore being sought. His main responsibilities will be:

1. To formulate WWF's international conservation programme. This involves close co-operation with its National Organizations and IUCN in development of programmes and projects, participation in control of projects and active follow-up of results achieved through projects.
2. Serve as a focal point in WWF for all conservation-related issues, in close co-operation with the Information and Education Division, e.g. to participate in the formulation of position papers and briefings, and to participate in the scientific vetting of material.
3. Serve as a communication channel on conservation matters between WWF-International and the National Organizations, and between WWF and IUCN and other conservation organizations.

### Qualifications

The Director of Conservation Programme Division must have a deep knowledge of conservation, both of its scientific and technical aspects. He or she must have administrative experience, be a good communicator and be able to work as part of a team.

**Remuneration** will be commensurate with experience and qualifications.

**Applications**, in confidence, should be sent by June 30th to the Director General, WWF-International, Avenue du Mont-Blanc, 1196 Gland, Switzerland.

on 15 June. To date, the College has trained close to 1000 wildlife and protected area managers throughout anglophone Africa. Mweka is located at 1400m elevation on the slopes of Mt. Kilimanjaro in northern Tanzania near Moshi. It is recognized as the pioneer training institution of its type in the world and operates in a variety of life zones from glaciers at 5900m to coral reefs and coastal zone habitats. Today, Mweka college graduates are responsible for various senior management duties in virtually every protected area in eastern Africa.

## Argentina: Research for Reserves

The authorities of the Chubut province in Argentina in charge of natural reserves open to tourism have taken legal steps to encourage and regulate scientific research and information dissemination in the areas under their jurisdiction in an effort to strengthen the conservation base there. Requests for permits for commercial filming or for research should be sent to the Dirección de Conservación del Patrimonio Turístico in Rawson, Chubut.

## Automatic Weapons Take Elephant Toll

The use of automatic weapons to kill elephants and rhinos in Africa has not abated. Particularly affected are Senegal, Central African Republic, Somalia and Sudan. Incidents are also reported in the Ruaha National Park in Tanzania and Kruger National Park in South Africa. Poaching in Kruger has increased from 20 elephants to over 126 in 1982. Most were killed by Kalashnikovs. In Namibia, decreases of over 40 per cent of the elephant population in Kaokoland between 1981 and 1982 have been reported.

## Dam Cancellation Spares Parkland

Plans to construct the \$300 million Tembeling Dam in West Malaysia have been cancelled by the Government in January. As a result, Taman Negara, the only national park in West Malaysia will be spared the adverse impacts of the construction which would have included inundation of seven per cent of the park's 300,000 ha area by the reservoir of the dam.



# READER'S CORNER

## New Books

**British Red Data Book I — Vascular Plants** (Second Edition), 1983 by F.H. Perring and L. Farrell. Published by Royal Society for Nature Conservation with the collaboration of the Nature Conservancy Council and the financial support of the World Wildlife Fund. Available from the Royal Society for Nature Conservation, The Green, Nettleham, Lincoln, U.K. (£7.00).

The second edition of the British Red Data Book 'Vascular Plants' is now available in paperback. The need for this next edition is very apparent, with the first now out of print due to popular demand. The species accounts have been updated using information gathered since 1977. This has meant the removal of six species from the red list since these are now considered more widespread than previously thought. Sadly enough, two species are reported to have become extinct, *Arnoseris minima* and *Bupleurum rotundifolium*, both corn field species. In contrast, however, three other taxa considered extinct in 1977 have been re-found: Sickie-leaved Hare's-ear (*Bupleurum falcatum*), Brown Bog-Rush (*Schoenus ferrugineus*) and a fumitory of arable fields, *Fumaria martinii*. From a flora containing approximately 1600 flowering species, this volume identifies 144 plant species as nationally endangered or vulnerable, compared to 141 in 1977.

### Let's Save Antarctica

by James N. Barnes, photographs by Eliot Porter, forewords by Sir Peter Scott and Eliot Porter. Greenhouse imprint, 112 pages, 21 colour photos, 2 maps 8" x 10", US \$6.95, paperback.

An illustrated handbook celebrating the unique beauty of Antarctica, with information on how to save Antarctica from the exploitation of its rich wildlife and natural resources — and why such action is urgently needed. With 21 magnificent colour photographs, *Let's Save Antarctica* explores this fascinating continent and its wildlife, explains why Antarctica is under threat, and gives practical information about the present political situation, treaty status, and countries involved. Damage to Antarctica's ecosystem could have far-reaching effects on global environment and climate, and this book offers concrete suggestions as to what can be done to help.

**What's Wildlife Worth? Economic contributions of wild plants and animals to developing countries** by Robert and Christine Prescott-Allen. Earthscan, 10 Percy Street, London W1U 0DR, UK, paper, 90 pp., £3.00.

This book aims at showing that wild animals and plants make a significant economic contribution to developing countries. It illustrates how that contribution is made and conservation must go hand in hand with development.

## The Environmentalist

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in Every Area of Environmental Protection.

Editors  
David Hughes-Evans  
James L. Aldrich

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*The Environmentalist* seeks pertinent answers and solutions from those in education, in government and in industry on issues such as:

- What innovations should arise from the Stockholm anniversary?
- Is the World Conservation Strategy the answer?
- What are the optimal management of human, natural and other resources?
- What on-going research is taking place in the fields of environmental education, training and communication?
- Where are the successful examples of innovations in training and retraining?
- How can the exchange of ideas, information and experience be facilitated?
- Can the study of the environment reunify the branches of knowledge and culture?
- What activities is being undertaken by intergovernmental, governmental and non-governmental bodies?

- What are the roles of education and training in conflict situations?
- What are the environmental problems of the North-South dialogue?
- What are the new educational and training needs of the third generation environmental problems?

*The Environmentalist* considers all these in editorial comments, in original papers, and in the information section. It also publishes reviews and letters. *The Environmentalist* will provide the 'cutting edge' of environmental thinking into environmental communications in terms of formal training programmes, conferences, seminars and short courses for practising professionals, decision-makers and public leaders. It will also provide the cultural means whereby the broader citizenry can be reached.

#### Subscription information

1982 subscription Volume 2—4 issues at the price of SFrs 150.— for Companies and Institutions (approx. equivalent US\$ 83.50). Personal subscription at the special price of SFrs. 90.— Detailed Instructions to Authors, free specimen copies and further information may be obtained from the publisher:



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### A Who's Who for Environmentalists

The World Environment Centre has produced the **World Environment Handbook** with international listings of nearly 400 government agencies with addresses, key contacts and phone numbers. It is the most comprehensive — and handy — directory of its kind. Environment and natural resources agencies now operate in 144 countries — a 500 per cent increase over the last ten years. In the Third World, 105 countries now have environment and/or natural resource management agencies. At the 1972 United Nations Conference on the Human Environment only 11 developing countries could make that claim. Of the industrialized nations at the conference, just 15 had environment agencies. The listings in the handbook cover agencies dealing with agriculture, water, forests, health, energy, lands and livestock, industry, national parks, wildlife protection and other

areas of environmental interest. For your copy, please write to the World Environment Centre, 605 Third Avenue, 17th floor, New York, New York 10158, USA. The price is US\$25 plus postage.

### 1982 European Heritage Landscapes Conference Report

A full report is now available of the papers, discussions and conclusions presented at the European Conference held at Losehill Hall, 12-16 April, 1982. The fully illustrated, 77 page report includes translations (German and French) of summary, discussions and conclusions. Copies are available from: Peter Townsend, Principal, Peak National Park Study Centre, Losehill Hall, Castleton, Derbyshire, United Kingdom. Prices, including postage and packing are as follows: £6.00 for Britain; £6.70 (airmail) for Europe; £6.70 (surface mail) outside Europe. □



## IUCN Books

### Directory of Neotropical Protected Areas

436 pp with country maps, paperback, US\$35.00, £20.00 plus postage \$2.50 / £1.40 per book. Developing country rate \$22.75.

This book is the first in a series of regional directories replacing and updating IUCN's World Directory of National Parks. The directory describes the IUCN Protected Areas Data Unit and its monitoring process and outlines the IUCN system of categories of protected areas. Following this introduction, data from almost 90 percent of the protected areas of Latin America and the Caribbean are given alphabetically by country. Each area within a country is classified by type into one of ten management categories and details of its size, location, land texture, physical features, vegetation and noteworthy fauna are provided. Other categories covered include tourism, scientific research, staff, budget and park administration. Only obtainable from: Tycooly International Publishing Ltd., 6 Crofton Terrace, Dun Laoghaire Co. Dublin, Ireland.

### Proceedings of the World Lagomorph Conference

983 pp with maps, illustrations and charts, paperback. Canadian \$25.00; \$12.00 postage and handling.

This book contains about 100 papers presented at the first meeting convened by the Lagomorph Specialist Group of IUCN, at the University of Guelph, Ontario, Canada, 1979. The Lagomorpha is a mammalian group with a world-wide distribution, and with more than 60 recognised species, ranging from rare and endangered forms to rampant pests. The order contains many species of significant importance to man. As intermediate-sized herbivores the lagomorphs sustain a community of small, important mammalian predators, the foxes and lynxes and viverrids, and numerous large birds of prey, important components of all natural systems. Despite their continuing importance to man in both economic and scientific senses, the Lagomorpha as a whole remain poorly studied. In arranging this conference, the Lagomorph Specialist Group recognized the need to bring together workers from around the world to review present knowledge of the lagomorphs, to evaluate critically their role in world systems and recognise problems concerned with their management and conservation. Only obtainable from: Division of Continuing Education, University of Guelph, Guelph, Ontario, Canada N1G 2W1.

### The Importance and Values of Wild Plants and Animals in Africa

by Dr J.B. Sale, IUCN 1983, US\$10.00, 44 pp graphs and charts

The aim of this report is to demonstrate the current economic and cultural importance of wild fauna and flora in Africa. Viewed from a world perspective, Africa's

wildlife is one of its best-known and most appreciated assets and yet there is little awareness of the real importance of this resource in either economic or cultural terms. The present report represents an attempt to redress some of this imbalance and to improve the rationality for conservation in Africa. Available from IUCN and UNIPUB.

### IUCN Red Data Book on Invertebrates

IUCN 1983, US\$20.00, 632 pp.

The first Red Data Book on Invertebrates is now available. Produced by the IUCN Conservation Monitoring Centre the aim of this first volume is to present a balanced set of case histories illustrating pressures on invertebrate populations and habitats, and the range of invertebrates threatened by human activities world-wide. Each invertebrate phylum is discussed in introductory reviews and over 200 taxa are named and assigned Red Data Book categories. Subsequent volumes will deal with selected groups, such as molluscs and swallowtail butterflies in more detail. Available from IUCN and UNIPUB.

### Element of an Agreement on the Conservation of Western Palearctic Migratory Species of Wild Animals.

IUCN Environmental Policy and Law Paper No. 21., 1983. 54pp. Paperbound. US \$8.00.

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 1979) is an 'umbrella convention' which calls for the conclusion of individual agreements for the conservation and management of certain migratory species or groups of species by Parties that are Range States for the species concerned. In December 1979, a technical meeting on the management of migratory waterfowl populations was convened. A working group that included IUCN was set up to prepare the ground work for an Agreement under the Bonn Convention for the Western Palearctic Region. As a contribution to the work of that group, IUCN prepared draft proposals relating to the main provisions which could be included in such an Agreement. These proposals were discussed by the group and the outcome of the discussions is the subject of this publication. Available from IUCN and UNIPUB.

### Directory of Non-Governmental Conservation Organizations in the Wider Caribbean

IUCN, 1983, limited edition.

As a result of the NGO meeting held in Dominican Republic in August 1981, IUCN has now published a preliminary version of a Directory based on information made available during this meeting drawing on data from 14 countries and territories in the Wider Caribbean region. [The meeting was co-sponsored by IUCN and the Caribbean Conservation organization (CCA) and with the financial support of CIDA and WWF]. As a follow-up to this preliminary version, IUCN is requesting

further information from NGOs in Latin America and the Caribbean in order to produce a final version of the Directory with broader coverage. Information provided covers location, scope, structure and membership as well as information on current and planned activities of the different organizations. The Directory will serve to improve regional communication between organizations and will serve as a reference document for working with the NGOs in the region. Available only from IUCN.

### Proceedings of the Fifth Working Meeting of Crocodile Specialists

IUCN 1983, US\$15.00, 409 pp.

A collection of 26 full length papers resulting from the 1980 working meeting of the Crocodile Specialist Group of IUCN's Species Survival Commission held in Gainesville, Florida. A series of papers report world-wide on management practices and research techniques. Extensive tables, charts, graphs and literature cited sections make this compendium a useful reference source. Available from IUCN and UNIPUB.

### Elephants and Rhinos in Africa

IUCN 1982, US\$10.00.

Compiled and edited by Peter Jackson from the reports of the IUCN/SSC African Elephant and Rhino Specialist Groups, this booklet is now available. The booklet is illustrated and contains statistics relating to elephant and rhino distribution and trade in ivory and rhino horn, and recommended priorities for conservation. The French version is also available at the price of US\$10. Available from IUCN and UNIPUB.

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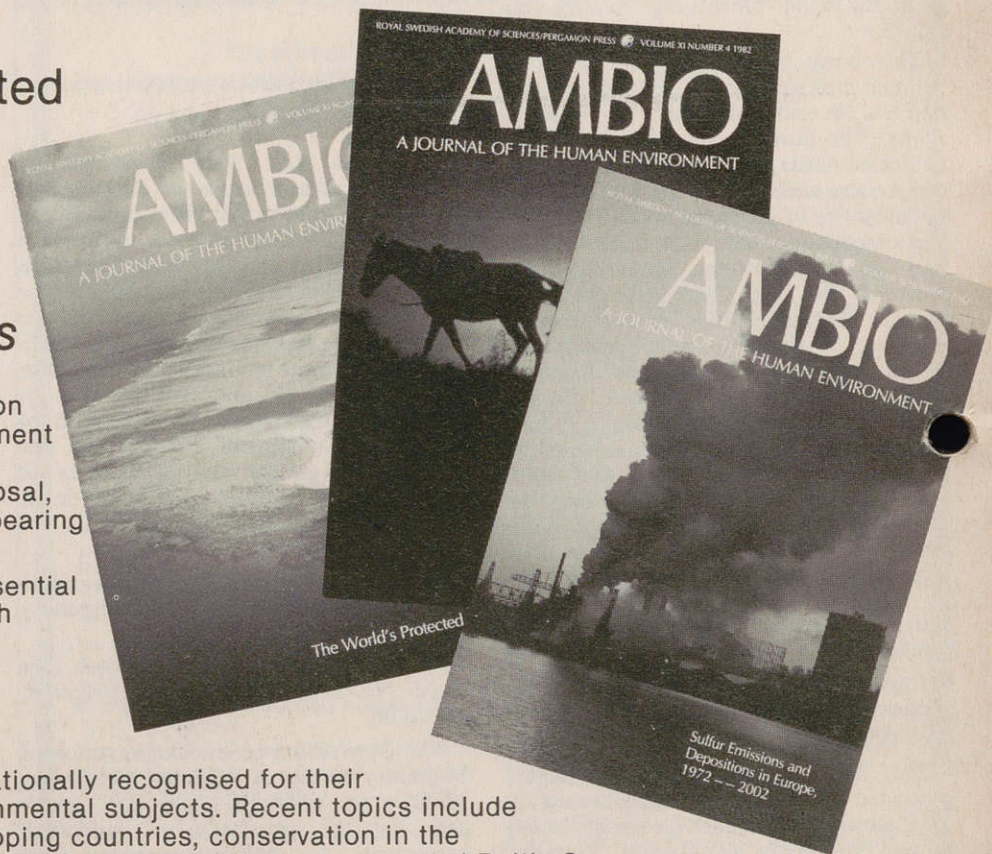
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