

IUCN
1971
YEARBOOK

International Union for Conservation of Nature and Natural Resources

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Annual report of the
International Union for Conservation
of Nature and Natural Resources
for 1971

1110 Morges, Switzerland



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INTRODUCTION

The International Union for Conservation of Nature and Natural Resources (IUCN) is an international organization, comprising as members, nations, government departments, non-political bodies and international entities, which aims at maintaining and enhancing the diversity of the biosphere by promoting rational management of the earth's resources. It was founded in 1948 following an international conference at Fontainebleau sponsored by UNESCO and the French Government.

It is concerned at the changes that are occurring in the environment as a result of man's continued encroachment on the life-supporting systems of the planet. The rapid increase of human populations and the concomitant rise in the rates of consumption of natural resources are threatening the quality of life. The accelerating destruction of habitats, and the over-exploitation and wanton killing of wildlife are eliminating plant and animal species faster than ever before, wasting genetic resources, and reducing diversity and future options.

The Union is dedicated to maintaining the highest continuing quality of life for all mankind; it seeks to halt the destruction of the natural environment, and promotes the conservation of wild places, and wild animals and plants, in their natural habitats. Conservation in the sense used by IUCN means management (which includes surveys, research, policy, administration, preservation, utilization, and hence implies education and training) of the resources of the environment, soil and minerals, air and water, and all living species, including man - so as to achieve the highest attainable quality of human life.

IUCN continuously reviews and assesses global environmental problems and promotes research relating to their solution. It formulates statements of policy on conservation, and provides governments and organizations with technical assistance and advice.

At the present time more than 70 nations are represented in the membership of IUCN. Members include 29 sovereign states, several hundred private and governmental organizations, and a number of international bodies. IUCN has close working relations with the United Nations system, particularly with the Economic and Social Council, UNESCO, FAO, UNIDO, WHO and WMO. It co-operates with the Council of Europe, the Organization of African Unity, the Organization of American States, and other inter-governmental bodies. It collaborates actively with the International Council for Bird Preservation, the International Council of Scientific Unions, and other non-governmental organizations.

The Union takes its basic policy direction from its Statutes and from its triennial General Assembly - the next of which will be held at Banff, Canada, in September 1972. Specific policy guidance is provided by the Executive Board, the Executive Committee, and six Commissions comprised of several hundred distinguished scientists and other specialists. Each Commission is concerned with a different aspect of the Union's work: Ecology; Environmental Policy, Law and Administration; Environmental Planning; Survival Service; National Parks; and Education. Details of the work of the Commissions will be found in the following pages of this Yearbook.

IUCN AND THE WORLD WILDLIFE FUND

Since 1961 IUCN has had a symbiotic association with its sister organization, the World Wildlife Fund (WWF), with which it works closely throughout the world on projects of mutual interest.

The World Wildlife Fund is an international charitable organization dedicated to saving the world's wildlife and wild places, and carrying out the wide variety of programmes and actions that this entails. WWF was established in 1961 under Swiss law, and has its headquarters in Morges.

Although WWF may occasionally conduct its own field operations, it tries as much as possible to work through competent specialists or local organizations. But because of their increasingly close activities, IUCN and WWF have decided that joint operation of the various projects with which they are concerned is obligatory in order to make the most effective use of available essential facilities, funds and manpower. Project operations are therefore being carried out by Project Officers on the staff of either IUCN or WWF, assigned to act on behalf of both bodies under the control of the chief executives of both Secretariats.

Because of this development, no attempt has been made in this Yearbook to assign the credit for projects to either organization specifically.

WWF fund-raising and publicity activities are mainly carried out by National Appeals in a number of countries, and the international governing body is made up of prominent personalities in many fields.

REVIEW OF WORLD CONSERVATION PROBLEMS

Progress or loss?

In 1971 the bureaucracies of the world stirred themselves, reviewed their activities and took some first steps toward finding solutions to the environmental crisis. It was a year of more talk than action. The world's scarce supply of environmental expertise was used in clocking millions of miles of jet travel to an endless round of conferences on the environment. The same words were repeated often by the same people in New York, Helsinki, Addis Ababa, Paris, Canberra, Mexico, Rome, Prague, Bangkok, and so on. Environment was the name for a 'moveable feast'. The task of educating the environmentally uninformed is not to be accomplished easily. But the cost was high. Outside the conference rooms and below the flight patterns of the big jets, the world environment continued to deteriorate.

War or the threat of war in Southeast Asia, Bengal, the borders of Israel, and other areas inhibited action to repair environmental damage and, since the continued existence of people seemed in doubt, the 'quality of the environment' received little concern. The full effects of war on the land and resources on which future generations must depend cannot yet be evaluated. But in Southeast Asia, in particular, in addition to a direct human tragedy, a long-lasting environmental tragedy seems indicated.

1971 was a year when environmentalists were cheered by the cancellation of United States' plans to develop a supersonic transport, but then had to reconsider their attitude when they saw the Ilyushin and Concorde versions of the SST fly into the Paris Air Show.

Hopes were raised when the United States stopped construction of the environmentally destructive Cross-Florida Barge Canal after 50 million dollars had already been spent. But they were set very low when the 'Cannikin' nuclear test took place, despite all protests, on Alaska's Amchitka Island; and lowered still further when China continued its atmospheric testing of nuclear bombs.

Areas of great concern to conservation were saved when Uganda decided against construction of the dam at Murchison Falls, and France decided against development inside the Vanoise National Park. Other areas were threatened when plans for Arctic oil development moved forward, seemingly inexorably.

The rainforests of Southeast Asia were hacked and battered by the power saws and heavy machinery of timber companies based in the United States, Canada or Japan. At home, some of these had been models of good behaviour and environmental concern. Overseas, they showed another face. Sound forestry practice, sustained yield, forest regeneration, all seemed to be forgotten terms. Forgotten also were the boundaries of some parks and reserves, supposedly established for all time. It will take years before the damage can even be evaluated and, meanwhile, the hope for rare and endangered species is diminished and extinction seems inevitable for some. The chance for preserving meaningful samples of the old forests grows less.

Throughout the tropical forests of the world a similar pattern was repeated. In Latin America great areas were cleared to make room for what can be, at best, temporary pasture. In Brazil, the TransAmazonica project moved forward, pushing roads into previously undisturbed wilderness. Following the roads the poachers, the forest plunderers, and finally the settlers moved in to guarantee that nothing would be left as it had been. One could not question the practice if the lands were to be well managed and their productivity maintained or enhanced, and if the necessary reserves had been established, protected, and managed. But this was not the situation.

The world's grazing lands fared little better. Speaking at FAO's council meeting in Rome, delegates from all the desert-edge countries of Africa and Asia asked for assistance in halting the spread of the desert. But deserts continued to advance, following on the grazing mouths and trampling hoofs of too many goats, camels, donkeys, horses, sheep and cows. The knowledge of how to manage the steppe and shrubland is available. The will to apply it is not.

Pollution grew worse in 1971. Jacques Cousteau, among others, spoke of the "death of the ocean" from the continued spread of polluting materials. Around the once clear waters of the Mediterranean, beaches were closed to public use when garbage, sewage, and petroleum wastes accumulated. The Rhine, shrunken by a prolonged dry season, discharged the wastes of western Europe into the sea off Holland. In the Tiber a breakdown of the Rome sewage system produced its toll of thousands of dead fish. The Thames, held up as a model of how the problems of

water pollution can be solved, was set back in its progress toward purity by a prolonged strike of sanitation workers.

Evidence continued to accumulate on the disastrous effects of various biocides, notably DDT and its relatives, on predatory and fish-eating birds, and on possibly more threatening consequences to other forms of life including oceanic plankton, sea mammals and fish. On the Channel Islands off California reproduction of brown pelicans had virtually ceased, and was diminishing in other sea and marsh birds. An unusually high concentration of DDT was found in the fatty tissues and brains of sea lions. Was it the cause of the loss of hundreds of young sea lions found dead on the beaches? There was a decline in puffins on St. Kilda, off Great Britain, down from 3 million to a quarter of a million pairs, and a decline in the tern population off Holland, while across the world a survey of the California and Oregon coasts showed sea birds far scarcer than had been expected. Was it DDT, or PCBs, or something else ?

Evidence of widespread heavy metal pollution, notably from lead and mercury, was found in the oceans and many fresh-water areas of the world. Sportsmen in the US were warned of mercury-polluted ducks coming down the flyways from Canada. In Tasmania the finish of the oyster industry as a result of mercury poisoning was predicted. Somewhere in the Pacific tuna and swordfish picked up a dangerous dosage of mercury, and an entire fishing industry was endangered. Investigators sought sources of pollution. Polluting industries were closed down in some places. Some questioned whether or not the original base level of mercury, lead, and other metallic pollutants such as cadmium and arsenic had not been much higher than expected, and in consequence the contributions of modern industry less important.

In the United States where there has been a maximum amount of talk about pollution, a report by Ralph Nader's group suggested that real progress toward cleaning up the nation's water was minimal. In the United Kingdom, by contrast, environmental experts such as Max Nicholson and Kenneth Mellanby stated that a minimum of talk and confrontation had led to significant progress in improving the quality of the water and air. Editorial comment seems inappropriate.

Throughout the year world population continued to grow at the deadly rate of 2 per cent per annum. The United Nations Demographic Yearbook appeared with the depressing news that in the first seven months of 1970 alone the world population increased by 71 million people. Thus, despite continuing wars, hurricanes, floods, droughts, and the normal toll of age, disease and accident, the world gained a population equivalent greater than the total population of any except the eight most populous countries.

The biosphere faced 1972, the year of Stockholm, with 3,750 million human inhabitants.

It is possible to paint a completely dismal picture of the human environment in 1971 without straying from the facts. Yet, most conservationists were more hopeful than ever before. The endless talks and conferences showed signs of producing results. Public opinion and the attitudes of governments generally had moved from negative or neutral to a positive concern for environmental questions. Developing nations, along with those technologically advanced, advocated intergovernmental action to halt the degradation of the natural resources of the biosphere. Around the world young people became deeply concerned about environmental issues - a concern expressed strongly at the International Youth Conference on the Human Environment, in Hamilton, Ontario.

In Geneva, work continued toward formulating the agenda and programme to be considered by the United Nation's Conference on the Human Environment, to be held in Stockholm in June 1972. At the end of 1971, few who had worked closely with the programme held out hope that Stockholm would produce any basically new approach to the problems of the environment. However, a considerable gain had already been made in awakening governmental concern. At the least, it seems likely that existing organizations will find their environmental programmes strengthened as a result of the conference.

In Paris, the formulation of an effective Man and the Biosphere Programme under the leadership of UNESCO continued, leading in November to a meeting of the Intergovernmental Coordinating Council for MAB. As a result of this, 13 interdisciplinary themes for research and action were accepted along with a strong programme in environmental education. It is now in the hands of governments to determine whether an international effort will indeed be launched through MAB, with the aim of finding the facts needed for the rational use and protection of the environment. Considering, however, the degree of environmental damage that has occurred during the more than five years since the Man and the Biosphere Programme was first discussed, it is to be hoped that action will at last be forthcoming.

In Rome, the activities of FAO are taking new directions. The concern for quantity of production needed to meet man's basic needs will be tempered with a greater attention to the quality of his existence. Concern for protection of the environment was strongly expressed in the discussions of FAO's Council and General Assembly. Similar developments are taking shape in WHO, WMO and other organizations of the UN Family. Outside the United Nations, the International Council of Scientific Unions,

through SCOPE (Scientific Committee on Problems of the Environment) has initiated a number of environmental studies. There is now no shortage of organisations expressing environmental concern. The money available for their operation, however, continues in short supply.

At the national level, new national parks have come into existence, notably in the Congo (Kinshasa) - now Zaire - and in Costa Rica where the parks programme has gained strong governmental support. Most striking perhaps was the Soviet Union's plan to establish one of the world's largest national parks surrounding and including Lake Baikal, thus protecting this unique lake from future exploitation or damage. IUCN knows of only one species that was reported to be extinct in 1971, a little-known house finch, *Earpodacus mcgregori*, that once inhabited San Benito Island off Baja California, although the threat to many others had substantially increased. Some are distinctly better off, the vicuna of Peru being an example. Several species thought to be extinct, such as the small marsupial, *Burramys*, of Australia, have been rediscovered, or as in the case of the Ivory-billed woodpecker in the United States and the Grizzly bear of Mexico, some evidence of their continued existence has been found. In Iran a sizeable population of the endangered Asiatic cheetah was discovered. In Iran also, on the occasion of its hosting the successful Wetlands Conference at Ramsar, it was announced that one of its wetlands of international importance would be brought under international control, a splendid lead that it is hoped will be followed by other countries.

New ministries of the environment, or their equivalent, have begun to function in a number of nations (e.g. France, United Kingdom, Australia). It is too early to judge their effectiveness.

In reviewing the world situation, IUCN finds increasing need for improving its means of determining what situation really does exist. In fact, no single agency anywhere can report accurately on the state of the ecosystems and species of the planet in 1971. The information does not exist in any one place and the means of gathering and coordinating the knowledge available to those who know their own areas are not yet effective. Yet virtually every survey made either by IUCN or reported to IUCN indicates that the situation is worse than had been expected from earlier reports. The need for better surveillance of the environment is apparent to all organizations concerned, as a means of determining priorities for action founded on fact rather than emotion.

Based on its existing knowledge of the world situation, IUCN gives high priority to the protection and management of wild species and wild communities. The priority results from urgency. Other environmental

problems may perhaps be shelved to be solved tomorrow or the day after, but in many parts of the world action must come now if species are not to become extinct and natural communities are not to disappear. There is no second chance. Madagascar is an example. The Malagasy Republic leads all other nations in the number of seriously endangered species of mammals to be found within its boundaries. Not only the species, but their unique habitats continue to decrease through human depredation. The Malagasy government is poorly equipped financially to deal with the problem. An immediate effort to protect these species and areas has therefore engaged the attention of IUCN, the World Wildlife Fund, and inter-governmental agencies.

Disappearance of species continues to result primarily from the destruction of habitat, the result of poorly-planned land use or the inability of governments to control land use. The establishment of parks and reserves is one means of arresting this process, but it is only one way. Reserves cannot stand alone if the lands that surround them are mismanaged and degraded - a situation now all too apparent in Spain, where the Coto Doñana reserve is threatened by development taking place outside its boundaries.

Disappearance of species results also from continuing overexploitation. Although control of this rests basically in the hands of national governments, much can be done in the international arena. Many species would be secure enough were there not a growing demand for them in the market places of wealthy nations - alive as pets or scientific specimens, dead as hides or furs, ivory or calipee. Attempts to influence and provide means for the control of world traffic in endangered species has occupied the attention of IUCN during much of 1971.

Concern over species and the protection of natural ecosystems inevitably forces attention to the islands of the world. Here a high percentage of the endangered taxa are to be found, and here also unique communities of endemic species have a precarious status. In 1971, attention to the problems of islands led to a conference in Noumea, New Caledonia, attended by people from throughout the Pacific. New Caledonia, where unrestricted mining and its associated mineral prospecting threatens to destroy a truly remarkable endemic flora and fauna, was a suitable location for focussing attention on problems shared by other island people. Sponsored jointly by IUCN and the South Pacific Commission the conference confronted a depressing array of environmental facts. All added up to the disappearance of any nostalgic view of Pacific islands as unspoiled refuges for man or beast. Development has not been kind to the Pacific, and the tourism which could have been a saving influence now threatens

the destruction of the very qualities that have attracted tourist interest. Entire ways of life and the environments that supported them are vanishing. Particularly disturbing is the continued assault on the life-supporting coral reef communities and their associated lagoons by over-harvesting (in part to meet tourist demand), and growing pollution (often from tourist hotels and facilities). Action between IUCN, the South Pacific Commission, and other intergovernmental bodies will offer some hope of arresting the trend. New Caledonia has taken a lead with the establishment of a spectacularly beautiful and extensive marine reserve. IUCN, following initiatives it shared with IBP, has produced a draft convention calling for the establishment and protection of a system of islands for science which could be a big step toward safeguarding those few islands that still remain undisturbed, and perhaps for rehabilitating others.

In 1971, also, the 12th Pacific Science Congress was held in Canberra and attention was directed to the state of the environment in Australia. The passion for growth and development runs strong in that country where more than 80 per cent of the people are already urbanized. With such a concentration of people in cities, the land might be spared, but damage continues. Conflicts between development and conservation are rife, with particular trouble existing over the long-established 'rights' of the mining industry to stake its claims and start extraction almost anywhere. Mining and other exploitation of subsurface resources are a threat to the Barrier Reef and the islands and beaches of Australia's coastline. Mining claims prevent the establishment of badly needed national parks.

Although Australia's fauna has better legal protection than that of most countries, its status in many areas is still poorly known. Money has not been available for the kind of biological survey needed to determine populations or habitat requirements for most species, and in consequence it is not possible to fit needed conservation action to the requirements for complete faunal protection.

Despite a decreased demand in the world market for pastoral and agricultural produce, the onslaught on Australia's limited forest areas continues as land is cleared to make room for marginal grazing or agriculture. More recently there has been extensive clear-cutting of areas long considered as unlikely to be exploited, to meet the needs of Japanese industry for wood chips.

Although Australia has many experts in wildlife management, their recommendations have been too commonly overlooked by government. Thus the programme for rational use, conservation, and controlled exploitation of kangaroos has yet to be implemented. Ironically, the well-intentioned efforts of those who favour complete protection of kangaroos

had joined with those of graziers who favour drastic reduction, in preventing effective government action. In 1971, however, a select committee of the Australian House of Representatives carried out a careful review of the situation. In its report it stated that the larger kangaroos were not endangered, and recommended changes in the meat and hide industry to help in obtaining a continuing yield of products while safeguarding the species.

One could argue that among the major factors that cause the continuing crisis of the human environment, increases in population and the spread of pollution rank very high. Both have been of concern to IUCN, but its activities in these fields have necessarily been limited, since they are of first priority to other, better endowed organizations. The third factor of major importance, the need for control over land and resource use is more central to IUCN's capabilities. In particular, this becomes important as it relates to the course of economic development, and this is of first concern to most countries in the world. IUCN, acting together with other organizations, has sought to promote the use of ecological knowledge on an equal basis with economic and technological considerations in decisions affecting the development of land and resources. Considerable progress was achieved in 1971. Both the World Bank and the United Nations Development Programme have agreed to give more than lip service to environmental considerations before deciding to finance development activities. Bilateral agencies involved in international development, notably those of the United States, Canada, and Sweden, are considering appropriate means for incorporating ecological thinking into development planning. IUCN has devoted a large share of its time to promoting such changes and producing information that will be of value to nations and international organizations.

In summary, it is necessary to repeat, 1971 was more a year of talk than action. It is hoped that the talk will lead to action. But action costs money and is to be measured in results on the ground rather than the paper produced at headquarters. Money for the environment has been scarce in 1971. Needed projects, some desperately pressing, remain in the files. Virtually all environmental organizations are caught in the same dilemma and suffer the same frustrations. Perhaps 1972 will find an enhanced willingness on the part of nations and individuals to meet the financial cost of maintaining a world fit for people. If not, the environmental cost will be extremely high.

REVIEW OF UNION ACTIVITIES

The extensive reorganization of IUCN activities and the establishment of a Secretariat with strong professional competence in environmental matters which has taken place during the past two years has been aimed at maintaining IUCN's leadership in conservation matters and at strengthening it as a major centre for international action to preserve resources.

The management of the world's renewable resources is now a major concern of the Union. Emphasis has been given to the impact of man on his environment and to the importance of ensuring that development programmes are planned in accordance with ecological principles.

Closely linked with this activity is the conversion of the former Commission on Landscape Planning into the Commission on Environmental Planning. The expanded Commission is monitoring projects related to management of resources and to the reduction of environmental deterioration. Its work is coordinated with the scientific concerns of the Commission on Ecology which bear on these problems and with the activities of the Commission on Environmental Policy, Law and Administration. Considerable progress has been made in developing active projects within the fields of these last two Commissions, for both of which full-time Secretariat members were appointed as Executive Officers in 1971. An Executive Officer was also appointed for the Commission on National Parks during the year.

Emphasis was also given during the year to environmental education, particularly the development of curricula at all levels, teacher training, and the provision of teaching materials.

At the same time the Union continued its interest in the conservation of wild places and wildlife, a field that has traditionally given it a central role in conservation matters. But here, too, there has been a change in emphasis, with greater concern for the conservation of biotic communities, and the social and long-term economic values of wildlife and wild places.

During 1971 closer working ties were established between IUCN and its sister organization the World Wildlife Fund. The two secretariats at Morges are now considerably interlocked and all projects of both groups have been brought under joint management.

Working relationships with the UN system have also been strengthened and IUCN now enjoys formal consultative status with the UN in New York and Geneva, FAO, UNESCO, UNIDO, WHO and WMO. Effective working relationships now exist also with the other principal relevant intergovernmental agencies.

The Union has collaborated with the Secretariat of the UN Conference on the Human Environment (Stockholm, 1972) in the preparation of papers and as consultants in various aspects of the Conference preparations. It is also playing an important role in the development of the UNESCO Man and the Biosphere Programme.

Work is well advanced on the preparation of a multilingual dictionary of environmental conservation terms in English, French, German, Russian and Spanish. The Central Laboratory for Nature Conservation of the USSR Ministry of Agriculture is cooperating in this work.

A book entitled "Ecological Principles for Economic Development" has been prepared in collaboration with the Conservation Foundation (Washington, D.C.) and should be published in the summer of 1972. A publication on industry and the environment was drafted for UNIDO.

Information on the conservation status of the Mediterranean Coast is being collected as the basis for action projects for redevelopment of selected coastal areas and the preservation of important ecosystems. Related projects are concerned with the impact of man on his environment including case-studies on pollution of major water bodies in Europe, reducing the disturbances caused by tourism, and management of certain fragile ecosystems especially those on high mountains, in the Arctic and in deserts.

Work is also in hand in collecting information on the adverse effects of toxic chemicals, particularly the persistent chlorinated hydrocarbons, and this is linked with experimental work in Australia on specific effects on wildlife.

A start was made in preparing a collection of national statements on environmental policy and in compiling a directory of national agencies responsible for the environment.

An extensive collection of legal texts, including laws, regulations and international conventions, dealing with the protection of the environment and conservation of natural resources has been established at the IUCN Environmental Law Centre in Bonn. It now embraces texts from 100

countries, including material from provincial jurisdictions inside federal states.

Considerable effort has been expended on the analysis and codifying of this material. A thesaurus of about 2,000 key words has been developed and used in testing the adaptability of computerized data processing techniques for legal documentation. A demonstration of the computer interrogation and information display that has resulted will be given at the UN Conference on the Human Environment at Stockholm.

In co-operation with U.S. law schools, a start has been made on making an inventory of U.S. state laws on the environment. Several studies on new developments in environmental law that may find application in other jurisdictions have been completed, including the examination of the feasibility of adopting the U.S. scenic easement system as a conservation technique in Europe, and an analysis of the U.S. developments in standing to sue in environmental issues.

Work has also started on the production of a looseleaf book giving up-to-date information on the protection status of certain species of wild animals and plants by national administrations.

The Union has been responsible for the drafting of several important international conventions on conservation, including the Convention on Export, Import and Transit of Certain Species of Wild Animals and Plants; the Convention on the Conservation of the World Heritage; and the Convention on the Conservation of Certain Islands for Science. IUCN was also involved in the preparation of the final draft of the Convention on Conservation of Wetlands, initialled by 20 nations at Ramsar, Iran, in January 1971.

A major conference on environmental education in Europe was held in Rüşchlikon, Switzerland, in December 1971, and was attended by educationalists from 20 countries.

Work is well advanced on the preparation of a methods handbook on environmental conservation teaching in primary and secondary schools, and a handbook giving information on establishments and courses in environmental studies in Eastern European countries is in preparation.

An international conservation poster competition for children and young people was organized in Czechoslovakia with more than 3,000 entries from seven European countries.

Revision of the Red Data Book of threatened species, which is regarded as the authoritative work in this field, was continued.

A Green Book of important cultural landscapes that should be conserved has been started. The first issue covering landscapes in selected European countries is expected to appear in 1972.

Specific conservation programmes aimed at creation of new national parks or reserves or strengthening the protection and management of existing reserves have been undertaken, and include projects in Madagascar, Ivory Coast, Indonesia, and Panama.

Projects to examine the conservation status of the cheetah and leopard in Africa and the jaguar and ocelot in Latin America were started. Meetings were held and specific projects undertaken on conservation of whales, marine turtles, crocodilians, vicuna, deer and primates.

In all these numerous activities the work of the IUCN Commissions in initiating and guiding the projects has been invaluable.

BROAD ISSUES

During 1971, governmental and individual concern with global environmental problems continued to increase, though not perhaps at a rate sufficient even to deal with existing problems, let alone the multiplicity of new ones that came to the fore. Further disquiet was expressed about the exponential growth of world population - with its concomitant rise in the extraction, utilization and consumption of dwindling limited resources - and the rapidly worsening pollution of the planet by solids, liquids and gases. Encouragingly, more people than ever before have realized that the "Quality of Life" is being degraded at an alarming rate.

One expression of this awareness was the issuing in September 1971 of the Second Morges Manifesto. Ten years ago, the First Morges Manifesto was issued by 16 of the world's leading scientists, naturalists and businessmen, who were concerned at the rapidly increasing devastation of wild nature. The Manifesto led to the founding of the World Wildlife Fund and an increase in the scale of activities of IUCN. On the occasion of the 10th Anniversary of the World Wildlife Fund, celebrated at Lausanne, Switzerland, on 11 September 1971, the Second Morges Manifesto was issued, which read as follows:

"Man has now seen the world from space. Earth is a tiny island, an oasis of life, the only known place in the universe where Man can survive. But the web of life can exist only in the thin layer of air, water and soil of the planet's surface."

"Man recklessly despoils this, his only home, misusing and over-exploiting its finite resources and straining the delicate life-sustaining

mechanisms, threatening not only the quality of life but Man's very survival. Underlying this critical development is the uncontrolled expansion of the human population and its ever-increasing demands and impact on the environment."

"Vast deserts bear testimony to Man's mishandling of once-rich resources. Verdant forests, with their essential regulatory functions affecting air, water and soil, have been changed into barren lands. The oceans and fresh waters have been poisoned and their teeming life threatened. Despite these dire warnings, Man has not halted, but has accelerated the wanton destruction of his heritage."

"This critical situation is of such vital importance and urgency as to command the highest attention of the world's leaders and responsible citizens throughout the human community. Conservation of the environment provides a new ethic to guide future action leading to the well-being of present and future generations and the health of the world."

"Action must be taken now and it must involve all of us. Our demands must be controlled and wise use made of our dwindling resources. Pollution must be halted at its source. Large areas of our surroundings must be conserved in a wild state, not only for wild life and wild places, but for the longterm social, educational, cultural and economic benefits of mankind."

"The signatories of this Second Morges Manifesto appeal to all men and women of the world to double and redouble their efforts to guarantee the quality of the environment and of all life on earth."

Many studies need to be and are being made of the multitude of problems involved in environmental conservation. Theories and concepts need to be developed and evolved, and programmes incorporating them put into action without delay. IUCN contributed to many of these studies during 1971, both on its own through the members of the Executive Board, members of the IUCN Commissions and the senior staff of the Secretariat - and through involvement in a number of international forums. Among the latter were included the preparatory meetings for the United Nations Conference on Man and the Environment which will be held in Stockholm, Sweden in June 1972; the International Conference on Environmental Future held at Jyväskylä, Finland from 27th June to 3rd July 1971; the Pacific Science Congress held at Canberra from 18 August to 3 September 1971; the South Pacific Regional Symposium on Conservation of Nature - Reefs and Lagoons held at Noumea, New Caledonia on 5 to 13 August 1971; the Atlantic Council of the United States and Battelle Memorial Institute International Conference on "Goals and Strategy for the Environmental Quality Improvement in the Seventies" held in Washington, D.C.,

U.S.A., 15 to 17 January 1971; the ICSU Special Committee on Problems of the Environment (SCOPE) Meeting, London, England, 15 and 16 January 1971; and the First International Environmental Workshop of Aspen, held at Aspen, Colorado, U.S.A., from 20 June to 7 August, 1971.

During the year plans were further developed for IUCN's 11th General Assembly and 12th Technical Meeting which will be held in Banff, Canada, from 10 to 16 September 1972. On this occasion the theme of the Technical Meeting will be 'Conservation for Development', and the following topics will be under consideration: environmental quality in a changing world; national and international environmental policies; ecological, multi-disciplinary approach to development planning; resource utilization and conservation; management of non-agricultural rural lands; dynamics of vanishing species and their habitats; and conservation of marine habitats.

Following the General Assembly, IUCN will be co-sponsoring the Second World Conference on National Parks, in Yellowstone and Grand Teton National Parks from 18 to 27 September 1972. The theme will be: National Parks - A heritage for a better world. Coincident with this Conference will be the celebration of the centenary of the establishment of the Yellowstone National Park in 1872.

Work on international conventions continued during the year. These included a convention on the export, import and transit of certain species of wild animals and plants; a convention on wetlands of international importance especially as waterfowl habitat; a convention on the conservation of the World Heritage; and a convention on the conservation of certain islands as "Islands for Science".

There was increasing awareness of the vital need to take ecological principles into account in the formulation and execution of development projects and two meetings have been held at which the needs of planners were discussed. One was at Rome in September 1970 and the other in Geneva in July 1971. The former, which was convened by IUCN, endorsed a book on ecological principles for economic development (see page 48). The second meeting, sponsored by the Ford Foundation, again endorsed the book, which was completed in draft towards the end of 1971. This draft was circulated to numerous experts throughout the world for critical comments, many of which have subsequently been included. Publication is due in 1972.

Much work was also carried out on elaborating and improving a group of publications including the Red Data Book, the inventory of outstanding and endangered landscapes (the Green Book), and the UN List of National Parks and equivalent reserves. Progress was made on the multi-lingual dictionary of conservation and environmental terminology which is more than

ever necessary because the development of terminology has not been equal in different countries and, indeed, in some cases has become divergent.

Many of these aspects of the activities of the Union are described in detail in the following pages.

11th General Assembly and 12th Technical Meeting

During 1971 the planning for the 11th General Assembly and 12th Technical Meeting was almost completed. These meetings will take place at Banff, Alberta, Canada from 10 to 16 September 1972 as a result of the Canadian invitation extended to IUCN at the close of the 10th General Assembly.

The meetings will be particularly concerned with the role conservation plays in the development process, reflecting IUCN's growing concern with interdisciplinary considerations in all its activities. This topic was proposed as a means of focussing greater attention on the fact that if conservation is to succeed today, it must be an integral and important part of the planning process. The papers for the 12th Technical Meeting, which will occupy four days, have been commissioned from specialists in various aspects of the theme topic. The seven sub-themes include: environmental quality in a changing world; national and international environmental policies; ecological, multi-disciplinary approach to development planning; resource utilization and conservation; management of non-agricultural rural lands; dynamics of vanishing species and their habitats; and conservation of marine habitats.

Special tours are planned for the periods immediately before the General Assembly, and after its close on 16 September.

As on previous occasions, sessions of the General Assembly will be held both before and after the Technical Meeting, and time is being made available for meetings of IUCN Commissions.

Second World Conference on National Parks

Planning for this important conference was advanced materially during the year. Two major meetings were held in Morges, and basic agreement was reached on the form, content and scope of the meeting.

The conference will be held from 18 to 27 September 1972 in Yellowstone and Grand Teton National Parks, USA, in conjunction with the Centennial of the Yellowstone National Park. It is sponsored by the National Parks

Centennial Commission (a special U.S. body formed for the purpose of bringing the importance of national parks to full public attention), the U.S. Department of the Interior through the National Park Service, and IUCN. Co-sponsors are UNESCO, FAO, and the Natural Resources Council of America.

During the year, authors of the 33 papers being prepared as basic background for the meeting were selected and contacted. The papers will be edited and translated into English, French and Spanish, the conference languages, and distributed to delegates in advance of the meeting.

Invitations will be issued through diplomatic channels early in 1972, although the Conference is a non-governmental meeting designed for persons having direct associations with National Parks or park resources.

A major feature of the Centennial celebrations will be three days (18 to 20 September) of special activities in Yellowstone National Park which will include the formal opening of the Conference.

The technical sessions will commence at Jackson Lake Lodge, in Grand Teton National Park, on 22 September.

The UN Conference on the Human Environment

IUCN has been closely co-operating with the Secretariat of the Stockholm Conference throughout its existence in providing suggestions for conference agenda items, preparing, or co-operating in the preparation of, four of the basic papers, and submitting several on-going projects presently being carried out by IUCN, some of them in co-operation with the World Wildlife Fund, as the basis for action programmes. Among the proposals for action are four conventions with which IUCN is concerned and which are expected to receive additional support through the Conference:

- a) Convention on Conservation of certain islands as Islands for Science;
- b) Convention on the Export, Import and Transit of Certain Species of Wild Animals and Plants;
- c) Convention on Conservation of Wetlands of International Importance Especially as Waterfowl Habitat (which has already been endorsed by some nations but which needs additional support from additional countries;
- d) Convention on Conservation of the World Heritage.

While the Stockholm Conference cannot solve the most pressing of our environmental problems, it nevertheless denotes the first international attempt at the very highest level to deal with environmental problems as a whole. It is hoped that it will become the starting point for the countries

of the world to undertake environmental action on a global scale, contrasting with the present situation in which national interests provide the main motive for policy and action. It is likely that co-ordinating machinery will be established within the UN system for maintaining a continuing attack on environmental problems. IUCN expects to be involved and to co-operate fully within the scope of its interests and expertise.

Evaluation of the Ecological Bases for the Concepts of Environmental Quality

A series of projects is being prepared to investigate the concept of environmental quality as it is related to ecological factors. These will include an investigation of human perception of environmental factors that are considered to contribute or detract from quality in the environment, and a determination of the ecological factors that govern the operation of the environment in which man lives.

The idea that mankind is entitled to live in an environment of high quality has received, in recent years, much publicity and acclaim. Concern for the quality of the environment has begun to appear more frequently in the programmes of national and international agencies that previously has been concerned almost exclusively with the use of natural resources, housing, transport, and other necessities for human existence. However, despite these expressed concerns there has been little attempt to define the concept of environmental quality even within one nation or culture, and virtually no attempt has been made to explore the differences between nations and cultures. Indeed, there has been a tendency to confuse environmental quality with freedom from pollution, partly because it is more easy to identify negative than positive influences, and partly because pollution can be more easily measured.

But the concept of environmental quality is much wider than the presence or absence of deleterious pollutants; factors of light and shade, air movement and calmness, and other climatic factors, the physiography of land and water bodies, and so on, all play a part.

The individual projects are intended to include investigations of attitudes towards open spaces, and the values of open spaces in the urban environment; attitudes towards national parks; attitudes towards wild animal life; and attitudes towards pollution. Further projects may deal with an assessment of the total concept of environmental quality, and with the development of indices to environmental quality for various environmental factors in different nations and regions.

The Regional Symposium on Conservation of Nature - Reefs and Lagoons

This meeting, held at the headquarters of the South Pacific Commission, Noumea, New Caledonia, from 5 to 14 August 1971, was sponsored by IUCN and organized by the Economic and Agricultural Section of the South Pacific Commission, with the cooperation of UNESCO and FAO.

The programme started with orientation sessions on general principles of conservation and then launched into discussion sessions dealing with general ecological assessment of Pacific islands; problems of conservation and planning their solution; conservation of historical, archaeological and palaeontological sites; impact of tourism; and the role of international organizations. Each subject was introduced by a basic paper presented by a discussion leader with interventions by various speakers followed by general discussion.

The proposed 'Convention on the Conservation of Certain Islands as Islands for Science' was endorsed by the meeting.

Country reports showed that although local features, and therefore specific problems, differ between the various Pacific islands, several basic conservation and cultural problems were universal. In island territories where space and natural resources are limited, and the populations are increasing, grave environmental problems are already evident. Water pollution and over-exploitation of resources are leading to serious situations.

A number of significant resolutions emerged from the Symposium dealing with the use of ecological principles in development planning; the priority to be given to family planning and population control; the establishment of parks and reserves to preserve unique plant and animal resources; and the urgency of the action needed to initiate and finance qualitative and quantitative studies on lagoon and reef ecology.

World Heritage

Proposals have been made among conservationists of various affiliations for the creation of some form of organization to provide for the conservation of areas of such outstanding importance as to be of concern to all mankind. IUCN took the initiative to crystallise ideas in this context, and its Executive Board has recommended to governments throughout the world that action be taken to establish international machinery for the conservation of the World Heritage.

The Convention would cover natural areas of outstanding interest because of their geology, physiography, flora or fauna, or which have outstanding aesthetic interest, and cultural sites judged as being of outstanding interest because of historical, archaeological, architectural or artistic associations. Areas and sites would be judged according to their significance to mankind as part of the world heritage. Inclusion of any area within the World Heritage would involve, on the one hand, a solemn pledge by the nation concerned to ensure the maintenance and protection of the area and, on the other, a recognition of international responsibility to assist with its maintenance and protection.

In January 1971 a high-level Task Force was established by IUCN, which included representatives of UNESCO, FAO and the Secretariat of the Stockholm Conference. The following month the draft text of the proposed Convention, prepared by the IUCN Secretariat, was completed, and was considered by the Task Force at a meeting in April. Subsequent to this meeting, the resulting revised draft was taken up by the Secretariat of the Stockholm Conference and considered, at a meeting in New York in September, by an Intergovernmental Working Group set up by the United Nations. Further re-drafting took place and the new draft was circulated to governments by the Stockholm Conference Secretariat.*

Islands for Science

IUCN and a number of other conservation organizations, notably IBP and the Pacific Science Association, have been considering for some time the need to take action to protect certain islands, usually remotely situated and uninhabited, as reserves and as bases for scientific investigation before they become taken up for development. Following discussions at several international meetings IUCN decided to prepare a draft Convention to give effect to this idea.

This draft was discussed at the Regional Symposium on Conservation of Nature - Reefs and Lagoons, which was held at Noumea, New Caledonia, from 4 to 14 August 1971, under the auspices of the South Pacific Commission and IUCN. The meeting endorsed the proposal for the Convention. Subsequently, the matter was brought forward again at meetings associated with the 12th Pacific Science Congress which were

* Parallel action focused on cultural heritage was taken by UNESCO. These two approaches were merged through the production of a further draft by a meeting of experts convened by UNESCO in Paris in April 1972 in which IUCN participated.

held in Canberra, Australia, in August 1971. Again there was general endorsement for the proposal.

The following month the proposed Convention was discussed at a formal meeting of the Intergovernmental Working Group (IWG) on Conservation, set up by the United Nations on the recommendation of the Secretary-General of the UN Conference on the Human Environment (Stockholm, June 1972), and held in New York from 14 to 17 September 1971. Once more the principle of such a Convention was endorsed.

The Intergovernmental Working Group recommended that the Conference Secretariat, in collaboration with IUCN, should redraft the text in the light of comments at the IWG meeting. The Secretariat then circulated the draft to all Member States of the UN asking for comments.

The proposed Convention is based on a number of premises including the fact that because of isolation, small size and other environmental factors, islands tend to develop specialized but often comparatively simple biotic communities; that they are of special value to science as locations for the study of evolution, genetics, population dynamics and so on; and that they are particularly vulnerable and easily disrupted by disturbances arising from human activities. It makes provision for each Contracting State to designate any suitable island (or part of such island) under its sovereignty for inclusion in a List of Islands of International Importance to Science. Subsequently each designated island would be legally protected and scientifically managed, under the guidance of an Advisory Committee elected by the representatives of the Contracting States. The Advisory Committee would also examine and rule on proposals for scientific observations and programmes of scientific research to be undertaken on the islands.

Convention on Wetlands of International Importance, especially as Waterfowl Habitat

Delegates from 18 nations, in the presence of official observers from five others, as well as from FAO, UNESCO, CIC, ICBP, IUCN, IWRB, IBP and WWF, were present when agreement was reached on the text of the proposed Convention on Wetlands of International Importance especially as Waterfowl Habitat. The Convention, which had been in the making for almost a decade, was finalized at the International Conference on the Conservation of Wetlands and Waterfowl held at Ramsar, Iran, from 30 January to 3 February 1971, which was convened by the Imperial

Government of Iran and sponsored by the IWRB in collaboration with IUCN, IBP, FAO and UNESCO.

The Convention is a major step forward in international co-operation in the conservation of wetlands. It will ensure international action to safeguard a chain of wetlands to provide refuges for waterfowl in their annual migrations. It will also focus attention on their exceptionally high intrinsic productivity, and on the multiplicity of values non-marine wetlands have for science, ecological understanding and education, and many kinds of economic human recreation.

For many reasons, including attempts to remove health hazards and annoyances, and mounting pressure to open up flat and fertile land for cultivation, the number of wetland areas has sharply decreased, especially in the past 50 years. The remaining areas throughout the world are still under constant threat from drainage and pollution, which may be deliberately planned, or arise incidentally from ill-considered development in surrounding areas.

Proposals for a convention on wetlands have been discussed at a number of meetings during the past 10 years, starting with the International Conference on Wetlands (the MAR Conference) in 1962, which was organized jointly by IUCN, ICBP and IWRB. At that time it was decided that IUCN should compile a list of European and North American wetlands of international importance, in accordance with an internationally agreed system of classification, together with detailed information on these areas. It was recommended at the same time that this list should be considered as a basis for an international convention on wetlands. Subsequent meetings refined a draft prepared by IWRB, and a second draft was prepared by the USSR. A compromise draft incorporating points from both the originals was prepared by the Dutch Ministry and this was discussed in March 1970 in Espoo, Finland. As a result a new text emerged which was the one submitted to the International Conference at Ramsar.

The final text that was evolved at Ramsar will be brought before a plenipotentiary meeting to be convened by the Imperial Government of Iran, which is charged with following up the Ramsar Conference. The text calls for UNESCO to act as depositary and IUCN to handle Secretariat work.

During the Ramsar Conference it was announced that H.I.M. Mohammad Reza Pahlavi had decided that Iran would place one of its wetland ecosystems of special international importance in joint trust with a suitable international agency, so that this particular wetland could be managed for the benefit of all mankind. The Conference commended this most important precedent to other governments.

Multilingual Dictionary of Conservation and Environmental Terminology

This project, for the preparation of a multilingual dictionary of conservation and environmental terms in English, French, German, Russian and Spanish, progressed well during 1971. Some 500 terms were selected, and arranged into eight sections including general terms, animal life, plant life, land, landscapes, water, protected features, and pollution. This work has been carried out in collaboration with the Central Laboratory for Nature Conservation of the U.S.S.R., Ministry of Agriculture, Moscow. At the end of September Mr V. A. Borissoff and Mrs V. Ekzertseva of the Central Laboratory spent a week at Morges going over the terms, which have been defined in English and Russian. The English definitions have been sent to specialists for comment, and their translation into French and German has commenced.

Environmental information and documentation centre

Up-to-date and reliable information is a *sine qua non* for any technical, operational or advisory organization, and for none more so than those involved in conservation. Not only are facts on fauna, flora, habitats, general environmental matters and development projects essential, but regional or global information may be a prerequisite for the valid assessment of some situations. Similarly, data on past, present and planned conservation projects must be at hand, and sources of expert advice immediately available.

Over the years much of this kind of scientific documentation has been accumulated by IUCN in connection with the Red Data Book projects and similar activities. During 1971 the collection of informational material has been accelerated both because the Union has been extending its work in connection with biotic communities, environmental planning and management, education and so on, and because of the ever-increasing number of queries on environmental matters which it receives. The van Tienhoven Library at the IUCN Headquarters in Morges contains a large number of books and other indexed material, and new publications are constantly being acquired by gift or through publishers. A considerable number of periodicals are also received, which are scanned for compilation of information files. Co-operation with other documentation centres, and with libraries in Geneva and Lausanne, is continually being increased to augment IUCN data and to avoid unnecessary duplication.

In 1971, a magnificent gift of books, journals and documents on world-

wide wildlife conservation was received from Dr and Mrs Henry Field of Coconut Grove, Miami, Florida, and this collection has been incorporated in the van Tienhoven Library.

An important part of IUCN's documentation system is the collection of material on environmental law which is housed at the IUCN Environmental Law Centre, in Bonn, and which now comprises some 15,000 documents from all over the world.

Graphical material is drawn from the WWF Picture Library which is housed at the World Wildlife Fund International Headquarters, at La Gracieuse in Morges.

International Youth Conference on the Human Environment

Under the sponsorship of IUCN, the International Youth Federation for Environmental Studies and Conservation, and the Environic Foundation International, and planned in cooperation with UNESCO and the Secretariat for the 1972 United Nations Conference on the Human Environment, more than 180 young scientists, professionals and students from 78 countries met for ten days of deliberation at MacMaster University, Hamilton, Ontario, Canada, from 20 to 30 August 1971.

This was the first time that young people representing environmental and other international and national organizations concerned primarily with the social needs and aspirations of youth have met together to discuss environmental issues.

The main purpose in convening the Conference was to increase the involvement of youth in environmental issues, to prepare guidelines for a continuous programme of international environmental action, and to formulate proposals for action in relation to the UN Stockholm Conference.

The Conference began with two days of orientation consisting of briefings on various topics related to the human environment.

Following this, working groups on 'Environmental Education and Information', 'Relation of Human Population and Natural Resources', 'Economic and Social Aspects of the Environment', 'Environmental Impact of Science and Technology', 'Environmental Quality for Human Settlements', and 'Environmental Aspects of the Management and Uses of Natural Resources', then started their work of exchanging information and putting forward proposed guidelines for future action.

The Conference presented 34 proposals for consideration by the September 1971 meeting of the Preparatory Committee for the Stockholm

Conference. Twelve observers, including the spokesman elected in the closing plenary session, were selected to deliver the Hamilton Conference Message to Stockholm. The observers immediately issued a *Statement of the Conference*, which is an abbreviated version of the Statement endorsed by the closing plenary session, and reads as follows:

"We, young people from 75 countries around the world, assembled at the 1971 International Youth Conference on the Human Environment affirm the following:

1. The quality of the human environment throughout the world can and must be improved.
2. We are faced with a crisis situation and are most concerned with the apparent inability or unwillingness of the governments of the world to recognize and deal with this problem.
3. The problem extends far beyond the obvious symptoms of industrial pollutants, the relation between population and resource exploitation, the introduction of hazardous and toxic substances into our environment, and the threatened extinction of innumerable species, including man himself.
4. If we are not prepared to recognize the undeniable fact that these symptoms are the direct result of fundamental flaws in our political, economic, and social systems, and that they are aggravated and perpetuated by unequal access to power and wealth, then we cannot possibly hope to solve these problems.

We submit, therefore, the results of our deliberation, in the hope that the governments of the world will take heed and act, lest we all lose the struggle for survival."

SCIENCE OF CONSERVATION

IUCN has been assisting in the development of the science of conservation through a number of projects. The studies within these projects have included *inter alia* a concern with the development of ecology and the application of ecological principles in various spheres of development and human activity. Particular attention has been given to the conservation of renewable resources with emphasis on the special needs of education and rational management to ensure that production can continue on a sus-

tainable yield basis and that options are kept open for the future. In this regard also, attention has been given to the important contribution of wild life in natural habitats to the concept of the highest quality of life for mankind.

Consideration has been given to the monitoring of biotic communities and a good deal of practical work has been accomplished as is shown in other sections. This is an important facet of the overall problem of the monitoring of environmental quality. Biological indicators which provide clues to the nature and amount of disturbance being caused to the environment, are being identified, and the consequence of disturbing factors and perturbations, including development programmes, fire, toxic chemicals, SSTs, the introduction of exotics, etc., have been examined. Work has been carried out on the problems of fragile ecosystems, and on ways of mitigating environmental disturbance, particularly in the Arctic, high mountains, islands, coastal and estuarine zones, and deserts.

IUCN has participated in the planning of Unesco's Programme on Man and the Biosphere, contributing to the development of projects and making proposals for their execution.

Review of Ecological Effects of Toxic Chemicals

This project covers arrangements for a continuing review and publication of information on the ecological effects of toxic chemicals, with special emphasis on pesticides.

It is, of course, well known that toxic chemicals have important effects on terrestrial, freshwater and marine ecosystems. Pesticides, in particular, are increasingly shown to be of importance in disturbing ecosystem functioning. While they have been valuable in preventive medicine and agriculture, the misuse of pesticides has had serious side effects resulting in economic damage, for example in the selection of resistant genotypes, and the destruction of the natural enemies of pests with the consequent production of new pest problems.

The present project continues and intensifies the collection and collation of data on the ecological effects of these substances, already being undertaken by a special task force. The work includes the collection of data on the production and use of chemicals which are essential for understanding and predicting ecological effects. The work is being undertaken in collaboration with the Monks Wood Experimental Station of the UK Nature Conservancy, at Huntingdon, England. Compilations of information will be published from time to time.

Impact of Urban Ecosystems on Biosphere Functioning

The extremely rapid growth of cities, especially of very large cities, in both developing and developed countries, is associated with problems of ecosystem modification and of human adjustment to changing environments. Such problems range from environmental imbalance to nutrition and public health, and those concerned with the broadest aspects of national and regional economy and society. To a remarkable extent, these problems appear, admittedly at different scales of intensity and in somewhat different forms, in all urban environments whatever the cultures and levels of economic development concerned.

In order to obtain a proper understanding of them it is necessary to approach the study of those artificial ecosystems which we call cities from multiple points of view; in terms of their influence on other parts of the biosphere, and by using the community knowledge of both the social and biological sciences. These systems are, of course, in a state of continuing disequilibrium, and their transformation from one sort of complex system to another requires investigation of factors relating to their disequilibrium state.

Urban environments are aggregates of human beings intensively using primary and secondary products produced elsewhere, accumulating wastes which are disposed of rather than re-cycled, and thus radically changing the natural order of nutrient distribution and availability.

Projects within this series, which are being discussed and elaborated, include studies on the micro-climates of cities in different climatic and cultural zones with a view to defining those micro-climates most acceptable and those less desirable to man; an evaluation of the impacts of urbanization on agriculture and rural life in the hinterland of cities taking particular account of the zones of interaction between urban and rural systems; investigations of the influence of urban infrastructures on biosphere dynamics, evaluating, for example, the effects of extensive road-building on water and heat balances; and studies on the ecological problems of waste accumulation and recycling.

Continuing Review of the Health of the Ocean

This project covers the establishment of a central service for producing, on a world basis, an annual review of the state of the ocean and marine resources, from the point of view of marine pollution and the other effects of man on the marine environment, and for forecasting long-term trends.

An activity of this kind has been internationally endorsed. The idea was incorporated in the "Comprehensive Outline of the Scope of the Long-Term and Expanded Programmes of Oceanic Exploration and Research," approved by the Intergovernmental Oceanographic Commission at its sixth session at UNESCO in September, 1969 and published in IOC, Technical Series No. 7 (UNESCO 1970). Although IOC is the focal body for co-ordination of this programme (known as LEPOR), implementation is to be by national institutions and a wide variety of international bodies, within and outside the UN system according to their interests, means and competences.

IUCN with its flexible organization and non-governmental status (leaving it free to express conclusions that may be unpopular with Governments), is in a good position to undertake this activity. This work must be done quickly and be relatively free of bureaucratic impediments. The studies must be objective and the information must come from all countries and sources, irrespective of location and political complexion.

Through the Marine Habitats Committee of its Commission on Ecology, IUCN is increasingly involved in a variety of marine conservation problems. An information analysis under its general sponsorship would provide a guarantee that disquieting evidence of harm to the ocean did not remain hidden. Accordingly, action is in hand to elaborate this project and to seek funding for it.

This activity will link closely with IUCN's proposed publication of an annual review of world conservation.

The Use and Role of Fire in Ecosystem Modification

Projects in this series are under review by the Commission on Ecology. Projects may include: a review of the incidence and distribution of accidental or intentional fire, which may be sporadic or cyclical, controlled or uncontrolled, in different environments; an evaluation of the impact of fire and differing burning practices on ecosystem components and processes - such as the floristic and physiognomic characteristics of vegetation, composition and abundance of macro-fauna and micro-organisms, soil structure and composition and the cycling of elements; research on burning practices compatible with the rational use and conservation of natural resources; and studies on the feasibility of remote sensing by aircraft and artificial satellites of the potential combustibility of vegetation.

The Role of Exotic Animals and Plants in Ecosystems Functioning and Stability

A number of individual projects are being discussed and elaborated within this series including and investigation of the factors leading to success or failure in species colonization and establishment in selected areas; a study of the comparative performance and role in ecosystem functioning of exotic and endemic species; and the development of methods of predicting the consequences of removing barriers to the spread of species, or the deliberate introduction of species into new habitats.

Further elaboration depends upon decisions to be taken by the Coordinating Council of the UNESCO Man and the Biosphere Programme.

GOVERNMENT AND CONSERVATION

IUCN is increasingly concerned with the development of government policy and administrative machinery for dealing with environmental issues. This concern embraces both the national and the international levels, since it is clear that governments are moving progressively towards collaboration and international agreement in environmental matters. During the past several years, government policy on the environment has been evolving at a rapid rate so that now there are many governments which have a national environmental policy. The conceptual basis for the development of environmental policy has been a matter of concern to the Union; it has also been involved in the evolution of stated government policy, and of the concomitant legal and administrative machinery for carrying these policies into effect.

A second feature has been IUCN's concern with the development of a new socio-economic theory arising from the increasing awareness of the finite resources of planet Earth and the importance of developing approaches not depending essentially on continual economic growth. In due course this may involve the evolution of new ethical and moral attitudes.

In addition to preparing a directory of government environmental agencies, and compiling information on government policy statements and structure for environmental administration, the Union has been studying legal concepts which are emerging in the field of environmental law. It has collected and is codifying legal texts on environmental matters

from all parts of the world. It has also drafted a number of international conventions affecting conservation of resources and the protection of biotic communities.

Integrating Environmental and Developmental Concepts in Administrative Practice

This project represents a co-ordinated, multi-institutional effort to study, formulate and transmit concepts and methods for the integration of ecological and environmental quality values into the planning and execution of development projects in developing countries, through a programme of research, education and training of potential administrators from those countries.

It has three major objectives: to generate a body of operational ideas which could be used by governments, and also by non-governmental institutions, in formulating public policies, and administrative structures and programmes of action, through which the objectives of social and economic development, environmental quality, and ecological values are reconciled; to provide an input to university programmes in environmental conservation studies in both the United States and in other countries; and to develop a cadre of people whose personal experience in having thought about many of the difficult policy issues relating to man/environment relationships will be a valuable resource to governments, universities, and environmentally-oriented industries especially in developing countries.

The project which is now awaiting funding will be undertaken jointly with the Committee on Institutional Cooperation of the Big Ten Universities and the University of Chicago.

Environmental Quality as a Political Concept

Work commenced in 1971 on the collection, analyzing, classifying and indexing of documents which carry official expressions of national environmental policy. The reasoning behind this project is that there is a demand for ideas and information on how governments could shape their own policies for maintaining or improving environmental quality. One way of satisfying the demand is to make a collection of the most important governmental statements or equivalent expressions of official intent on the maintenance or improvement of the quality of the environ-

ment available to the public. Where such statements are in a language other than English they will be translated and publication will be in both the original and the English language.

Directory of Government Environmental Protection Agencies

The collection of data for this directory has begun. Its desirability has been increasingly recognized as environmental protection has become a rapidly developing field of governmental action. The focusing of world attention on environmental matters through the UN Conference on the Human Environment (Stockholm, 1972) has further increased the demand.

The directory will list agencies of central governments that have an interest in environmental matters provided only that they have as their main task the protection, enhancement or restoration of the natural environment. It will not list the majority of non-governmental organizations - except those that are active on a world scale, or are very influential over a large or important area. Nor will it include government agencies that are primarily engaged in shaping some part of the environment for reasons other than conservation.

Aspects of Environmental Administration in Selected Countries

In the second half of 1971 IUCN and the Public Administration Division of the UN Department of Economic and Social Affairs discussed ways in which the two organizations could collaborate in connection with the preparatory work for the Stockholm Conference. It was decided that it would be most useful for IUCN to prepare a paper for UNPAD, which would deal with organizational, educational and legal aspects of environmental administration at various levels in different countries. It should thus provide governments, after the Stockholm Conference, with the results of research which could be used in the implementation of these recommendations.

The outcome will be a series of papers written by a number of authors and co-ordinated by Professor Lynton K. Caldwell (U.S.A.).

Environmental Law Documentation

This project covers the maintenance of the documentation at the IUCN Environmental Law Centre at Bonn, Federal Republic of Germany.

It is concerned with the central collection of legal texts housed at Bonn including legislation, regulations, and international conventions, dealing with the protection of the environment and the conservation of natural resources.

The collection was begun in 1963 and its original scope has gradually been extended until it now embraces most of the aspects of legislation bearing on the environment.

Currently, the collection includes material from nearly 100 countries, as well as material from provinces in federated countries, and comprises many thousands of texts.

Maintenance and operation of the Centre involves searching, scanning and indexing new accessions, shelving the selected texts in files, dealing with inquiries for information including photo-copying of documents and related activities.

The documents are filed according to areas of jurisdiction and, within these categories, according to broad subject matters. The areas of concern include the following: soil, water (inland), water (sea), air, flora, forest, fauna, hunting, fishing, toxic substances, non-renewable resources, planning and land use, recreation, wastes, noise, outside advertising, protected areas, import-export, and environment generally.

As far as information requests are concerned, a great number of inquiries were received and handled at the Centre. Numerous visitors from universities, other international organisations, governmental and private institutions have visited the Centre and made use of its documentation.

During the year special collecting expeditions were organized to collect environmental legislation from English-speaking African countries and Arab countries.

Miss Jane Sellar from New Zealand visited the following countries in Africa: Botswana, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Liberia, Nigeria, South Africa, Sudan, Swaziland, Mozambique, Rhodesia, Malawi, Tanzania, Uganda and Zambia.

Mr El Azzazi, Egyptian graduate student of the "Institut für Entwicklungsforschung und Entwicklungspolitik" at the University of Bochum visited the following countries: Morocco, Tunisia, Mauritania, Algeria, Lybia, Syria, Jordan, Kuwait, Iraq, Yemen, Saudi Arabia, Lebanon and Egypt. This latter collecting expedition was made possible by a contribution of the Karl Schmitz Scholl Fonds (KSSF) of the WWF-Germany to the German Institute on the condition that material for IUCN should be collected in addition to other tasks.

Analysis of Environmental Legislation

This project covers the indexing and computerizing of the material in the IUCN Environmental Law Centre. The object is to provide ready access to the documents, on a topic by topic basis, through the development and operation of an indexed and data processing system.

The material in the Centre now totals more than 15,000 documents covering all topics in environmental law, and the collection is being extended and expanded. Under these circumstances handling information requests and answering specific questions is more and more time consuming ; also, the value of each research cannot be recorded. A mechanized information retrieval system is clearly needed.

Efforts towards this have been undertaken since 1968. Attention has been given to existing computerized indexing systems, particularly with regard to programmes for computerization of legal data. After several initial studies including an trial with the S.I.R. system, the possibilities were investigated again and the IBM/DPS (Data Processing System) was chosen.

Present discussions with IBM include the possibility of using the newest programme in the field of documentation, namely the IBM/STAIRS programme.

The input work began in September 1969 with the codification of U.S. federal environmental legislation. By the end of 1970 the U.S. Federal Legislation had been codified as well as the New Zealand Laws and Regulations, and part of the United Kingdom and Czechoslovakian data. 1971 has been devoted to the codification of United Kingdom Regulations, Filipino, Argentinian, Peruvian, Canadian (federal), and part of the French texts. During 1971 also, extensive work has been carried out in relation to the thesaurus, or list of descriptors. This includes the development of alphabetical as well as subject matter indexes of key words, and the establishment of the relations between them. The thesaurus is now composed of approximately 2000 key words which in turn are composed of several concepts. The thesaurus, originally in English, has been translated into French and, to a certain extent, into German and Spanish.

The work which has already been carried out has been made possible by a grant from the Volkswagen Foundation. It is a research project grant, aimed at covering solely the expenses incurred in the testing of the adaptability of data processing methods to legal documentation on a limited but varied and multilingual sample of documents. The research project will be terminated in June 1972 and it is hoped that the demon-

stration of the project will take place at that date. Additional funding was made available, during 1971, by the Karl Schmitz Scholl Fonds (KSSF) of the WWF-Germany.

Collaborators in 1971, as far as the data input is concerned, have been: Mr Joel Kennedy, graduate law student from Queen's University, Kingston, (Ontario); Alfredo T. Nava, bachelor of laws and legal officer of the Parks and Wildlife Office in Manila; Mme M. Prado, Peruvian lawyer; Simon E. K. Reeves, barrister and solicitor from New Zealand; Mlle Brigitte Brunner and Alain Diot, both licenciés en droit, from the Universities of Strasbourg and Lyon respectively.

Inventory of State Environmental Law in the U.S.A.

This project covers an inventory of State Law in the U.S.A. (statutes, regulations, and major court decisions) relating to the environment, and publication in loose leaf form.

Environmental law in the U.S.A. is developing rapidly under the stimulus of unprecedented political and public interest. Currently there is no inventory available which will enable rapid access to this information. IUCN has already collected and analyzed U.S. federal legislation as part of the project on "Documentation on Environmental Law"; and the current project will provide not only valuable complementary documents, but also essential ones, as environmental matters fall mostly under state jurisdiction. This work involves the following steps: review of the state's statutes and identification of those relevant to environmental problems; similar review of regulations, court decisions and allied material; analysis and perusal of these texts in standard forms; and publication of the inventory by states and possibly by subject. Action is proposed on a state by state basis and depends on the collaboration available.

It is hoped that U.S. universities will become involved, and help in compiling and analyzing the documents. Already, two senior specialists have agreed to co-operate in this project, namely Professor A. Utton from the University of New Mexico, and Professor G. Radosevich from the Colorado State University. It is expected that the directing specialists will interest students in co-operating in this project.

Activities during 1971 concerning this project included extensive contacts with the above-mentioned collaborators, and a survey of all activities of Law Schools in the U.S. related to environmental problems. A request for information was sent to all U.S. Law Schools in spring 1971, and the response has been extremely satisfactory. Requested were a list

of all Law School activities dealing with environmental law, as well as the names of the professors involved in such activities, or teaching courses in the natural resources or environmental law field, or merely interested in the subject. Many of the descriptions of current programmes were so helpful that it was decided to make the material available to others. Permission to publish the information was sought, and an article has been written that will be published in a U.S. Law Journal during 1972.

In the light of the information received it is intended to seek the co-operation of U.S. Law Schools in completing this project, and to try to set up a task force for each co-operating U.S. university.

The project is under the general co-ordination of the IUCN legal officer, who will also supervise the standardisation of entries and final publication.

Feasibility of Adoption of U.S. Scenic Easement System as a Conservation Technique in Europe

This project, which is concerned with the study of a specific legal device, the U.S. Conservation Easement, was described in the IUCN 1970 Year-book (pp. 62, 63). A study of this device was carried out at the IUCN Environmental Law Centre during 1971.

Extensive documentation work was done before the arrival of Mr David D. Gregory, who carried out the project. He has been helped in his work at IUCN by Alain Diot, French post-graduate researcher, who wrote the French appendix, and by Hans-Jürgen Dietrich, German post-graduate researcher, who wrote the German appendix.

At the end of this three-months study, a document was drafted which outlines the need for conservation easements in the United States, the easement device, the variety of conservation easements, and also includes a study of the Massachusetts Conservation Restriction Act.

It is hoped that this introduction to the American Conservation Easement will stimulate others to look at their own system of land use control and ask themselves whether there is a need for a similar approach.

The study will be published among the new IUCN Environmental Law Papers early in 1972.

Standing to Sue in Environmental Disputes

This project aims to describe and compare the prerequisites for private citizens and for groups bringing legal actions designed to protect the environment.

Traditionally, courts have ruled that private persons did not have standing to sue, i.e., were not competent to file suits to prevent or recover for destruction to the environment, unless certain rather rigid criteria could be met. These criteria normally involved a requirement that the plaintiff had a direct personal, often proprietary as opposed to public, interest at stake. One technique for liberalizing standing has been to expand the definition of economic damage for which the plaintiff may seek a remedy. Alternatively some courts have significantly broadened the meaning of phrases, such as "aggrieved parties", which appear in statutory provisions specifying who has the right to seek judicial review of administrative action. Legal activity and legal thought in the United States has refined and analyzed the concept to a much greater degree than in most other countries, and it is considered that the policy issues underlying the legal technique are of interest to all nations.

Under the impetus of U.S. evolution, trends are developing in other legal systems, such as the German. It was therefore considered adequate to study the U.S. evolution in detail, and to give an outline of the situation in various other countries.

Preliminary documentary research was carried out at the IUCN Environmental Law Centre during spring 1971, and a great amount of material on standing to sue and environmental law was collected.

U.S. trends and basic policy questions were studied at the IUCN Bonn office by Mr David Gregory during the summer of 1971. The result of this study will be published early in 1972 among the IUCN Environmental Law Papers.

The policy questions have been emphasized independently of the legal technicalities because the study is not aimed only to be attractive to lawyers, but rather to point out the basic issues. Further, it is believed that the policy issue will be faced by all nations which might consider broadening the scope of environmental litigation.

The project is designed as a continuing one and position papers on the law of standing to sue related to environmental problems in other countries are to be published at a later date. The first will be on the German situation by Professor Rehbinder of the University of Bielefeld.

Import-Export Regulations Designed to Protect Certain Species of Wild Animals and Plants

This project aims to provide up-to-date information on the protection status afforded to certain wild species of plants and animals by national legal and administrative measures, with emphasis on import-export regulations. It will culminate in the compilation and publication of a loose-leaf reference volume containing summaries of relevant legal prohibitions. There are three reasons behind this project. First, a reference volume will be needed to help implement the international convention on the import, export and transit of certain species of wild animals and plants, which IUCN has drafted. Secondly, certain countries already need such information because they have policies which seek to protect certain species of wild animals and plants by taking into account regulations of the exporting countries. Thirdly, it is hoped that such a reference volume may help in harmonizing legislation in this field.

A contribution of funds by the Zoologische Gesellschaft von 1858, Frankfurt am Main, enabled an initial three month study to begin in November 1971, and it was decided to focus initially on fauna.

The collection of relevant documents from many countries already available at the IUCN Environmental Law Centre has provided a good basis, and additional requests for information have been sent to all countries of the world. The response so far is encouraging.

A preliminary information sheet has been drafted for each legal text, and these sheets will be used at a later date as a basis for a summary of the relevant protection status for that country. Each information sheet contains the following information: Country, Title of Document, Summary, Source of Information, Citation, Location of Text, and Species Affected.

When the project is completed, an index of the species covered will be published together with references to the relevant document. An indication of the sources of information and dates received will also be included. A preliminary issue of this study is expected during 1972. By the end of 1971, approximately half the preliminary information sheets related to fauna had been completed.

The IUCN legal officer is in charge of compiling the material from existing IUCN documentation and other sources. Mr Joel Kennedy of Queen's University, Kingston, Ontario, Canada, is working full time on this project for three months, and is analyzing relevant documents and handling correspondence with the various government agencies.

Convention on Export, Import and Transit of Certain Species of Wild Animals and Plants

The Convention is concerned with species threatened or declining because of over-exploitation, particularly those that enter international commerce, and is designed to regulate traffic in these species. The proposed regulation is primarily at the point of origin through the institution of export permits, with control to be exercised by the competent authority designated by the exporting country. This will limit the number of permits granted so that further over-exploitation will be avoided. Although border checks on permits at exit and entry are important elements in the regulatory mechanism, it is implicit that internal checks at various points in the marketing chain will also be involved.

The draft Convention proposes that over-all supervision would be undertaken by an International Advisory Committee appointed by representatives of the Contracting States. The Swiss Government has formally agreed to act as depositary for the Convention, and it is expected that IUCN will provide the Secretariat.

A third formal draft of the Convention was circulated to all Member States of the UN in March 1971. The United States Government has undertaken to convene an intergovernmental conference in 1972 to conclude the Convention.

ENVIRONMENTAL PLANNING AND MANAGEMENT

IUCN is greatly concerned with reducing or alleviating the undesirable effects of the impact of man and his activities on the environment. In every country throughout the world, population growth and economic development are having profound repercussions on the biosphere. Among the specific developments that can cause damage are the growth of human settlements, industry and tourism. Not all are detrimental, a few are beneficial; and it is IUCN's policy not only to eliminate the harmful effects but also to help to ensure that development shall enhance man's environment. It is therefore involved in the development and application

of landscape and land-use planning theories, and in the elaboration of the subsequent, equally vital, management programmes.

As a basic step, a book entitled "Ecological Principles for Economic Development" has been written in collaboration with the Conservation Foundation (Washington, D.C.) and will be published during 1972. This is being followed by a project involving the publication of a book containing a series of case histories of man's successful attempts to cope with the problems of development in relation to the environment. Close liaison will continue to be established with various development agencies.

Apart from these broader issues of land-use planning, landscape planning, the urban-rural development cycle, and regimes for management of environmental situations and resources which form an on-going concern of the Union, attention is being given to particular issues of current concern. One of these is regulation of tourism so that this important aspect of resource utilization may be developed without destroying the values on which it is based. Other aspects involve concern with coastal areas which are now subject to the greatest concentrations of population, and the identification, through the "Green Book", of outstanding and threatened landscapes that warrant protection.

Specific attention is being directed to the problems of managing fragile and specialized ecosystems, particularly those of the arctic, high mountains, islands and deserts. Thus, for example, action is being taken to develop a mechanism for co-operation between governmental scientists from those nations with arctic territories in matters relating to conservation.

Liaison with Development Agencies: use of ecological principles in economic development

This project aims at providing development agencies with materials and methods to assist in increasing the use of ecological principles in the planning and execution of their activities. The first concrete action is the project immediately following.

Ecological Principles for Development Planners

This project is concerned with the production of a book, written jointly by Dr R. F. Dasmann of the IUCN staff, and Mr John P. Milton and Mr Peter H. Freeman of the Conservation Foundation, Washington, D.C., which will present basic ecological concepts which should be

considered by those proposing major modifications of natural systems as a part of economic development.

The need for such a book has been often stressed by ecologists, sociologists, planners and administrators of agencies concerned with economic development, and those concerned with conservation as a means of bringing about a working partnership between these groups. It will aid in the prevention of the environmental problems that have beset environmental projects in the past.

The draft of the book was completed in mid-1971 and circulated to experts throughout the world for comment. These were taken into account in producing the final version which, it is planned, will be published commercially in mid-1972.

Environmental Case Histories for Development Planners

This project covers the development of a book containing a series of case histories of man's successful attempts to cope with the problems of development in relation to the environment.

It was originally discussed in the Working Group meeting at FAO in Rome, in September 1970, when it was agreed that priority should be given to the book on Ecological Principles for Development Planners.

Inventory of Outstanding and Endangered Cultural Landscapes (The Green Book)

Work was put in hand for establishing the criteria for this inventory at the end of 1970, and it was completed during 1971. The outstanding or endangered landscapes fall into three categories: first, sites of scientific importance, which may contain ecological communities of significance, outstanding geological formations and features, a special habitat supporting vanishing or restricted species of animals or plants, or which may be a seasonal haven for concentrations of native or migratory animals. Secondly, it was felt that the inventory should include a selection of typical cultural landscapes and biotopes which might vanish as a result of future development. These landscapes should maintain their original character, i.e. ancient and recent cultural landscapes, old terracing, or English hedgerow landscapes. Thirdly, it should contain scenic and recreational landscapes which are of international or national value because of their distinct, widely recognized scenic beauty, or which have exceptional value for recreation and tourism.

A preliminary study of four areas has been completed as a basis for discussion and elaboration. The information given for each includes its name, type, location, area, distinctive features, threats, action recommended, and a detailed description. Maps are given which show their boundaries clearly.

Landscape Planning in Conservation or Restoration of Historical Sites

Many historical sites have great international, cultural and touristic importance. Often they are not very large and they are usually to some degree controlled by archaeological or historical authorities. However, it is not enough to safeguard only the historical element; its setting is equally important. Although a considerable amount of research has been carried out on many sites and monuments, it has been found that little of this is relevant to the planning and maintenance of their surroundings.

This project is an attempt to rectify this situation, and will consist of three stages. Documentation will be obtained from Unesco and the Council of Europe, and material will also be extracted from case studies, including those of the Olympia region, Agra and Igarassu. A special Task Force will then assist in the development of guidelines, which will subsequently be published.

Landscape Classification and Ecological Monitoring of the Serengeti National Park

This project involves the classification of the Serengeti ecosystem into ecologically-based landscape units, and the establishment of representative permanent sample plots which, after detailed field examination and mapping, will be used for monitoring the Serengeti ecosystem on the basis of regular interpretation of aerial photographs of the plots. This will provide a system for the long-term monitoring of the area, capable of tracing ecological trends and quantitatively predicting their effects and useful as a basis for management.

The first stage, classifying the ecosystem into ecologically-based landscape units, has been completed, and representative permanent sample plots are now in the process of being established.

Co-ordination of Non-marine Wetlands Conservation

This project is concerned with setting up a mechanism for co-ordinating and promoting the conservation of non-marine wetlands.

Since 1961, IUCN has co-sponsored three major projects aimed eventually at covering non-marine wetlands on a global basis. These are: Project MAR, for the conservation and management of temperate marshes, bogs and other wetlands; Project AQUA for the conservation of aquatic habitats (lakes and rivers); and Project TELMA for the conservation of all actual or potential peat-forming ecosystems.

The common basic aim of all three projects is to identify and obtain *international recognition* of wetland sites of international importance.

A working group consisting of representatives nominated by FAO, IBP, ICBP, IUCN, IWRB, SIL, and UNESCO, has been set up to provide for consultations between the various interested organizations and to define necessary action. The first meeting was held on 9 March 1971.

Conservation Status of the Mediterranean Coast

This project is concerned with the determination of the conservation status of various parts of the Mediterranean coast. It has as its objectives the provision of information on the conservation status, and the monitoring of changes in the situation; the identification of sites for conservation purposes and projects of various kinds, including areas for development in accordance with ecological principles, and those warranting protection as national parks, scientific reserves and so on; the identification of sites for case studies on development; and the provision of a basis for assigning priorities and guiding conservation action throughout the coastline.

The project will commence with a broad reconnaissance and, on the basis of the information gathered, then concentrate on specific areas of particular interest. To allow the appropriate methodology to be developed, the initial studies will be made in France and Italy.

Contact has been made with a limited number of individuals in these two countries who are assisting in identifying sources of information and areas for the initial study. At the end of 1971, such information had begun to be accumulated.

Casebook on Approaches to Water Pollution Control in major European water bodies

This project covers the preparation of a casebook outlining alternative approaches to water pollution control undertaken by European nations in relation to major bodies of water. The studies will be made of the Rhine River System; the Danube River System; Lac Lemane (Lake Geneva); the Baltic Sea; and the Volga River System. These will provide five alternative approaches which could be employed by nations faced with similar problems.

Ecological Study and Management Methods - Establishment of a central repository and advisory service

This project is the first in a series concerned with ecological study and management methods, which may ultimately involve surveys of techniques of special application to particular geographical regions; the publication of an annual digest of new developments; the promotion of symposia on fields of special interest; and so on. The series of projects is a sizeable undertaking and it may be necessary to concentrate on wildlife techniques (in the conventional sense) initially and to expand the operation into more fundamental ecological methods in due course.

The object of this project is to establish a central repository of reference material on wildlife and other ecological study and management methods at the IUCN Headquarters, in Morges, as the basis for providing an advisory/co-ordinating service for research workers, training centres and natural resource managers.

Wildlife Management in Forest Areas

Projects in this series will involve a detailed appraisal of wildlife management problems in forest areas in various regions of the world, and the promotion of national and international action to remedy existing adverse situations.

Wildlife Utilization and Game Ranching

It is proposed to carry out an objective analysis of the entire game ranching programme, centering on Rhodesia, but extending to operations that have been conducted elsewhere in Southern Africa. This is seen as one phase of a more extensive evaluation of wildlife utilization programmes of other kinds and in other areas, being conducted by IUCN in co-operation with FAO and other organizations. It is hoped that this particular project might be jointly operated by IUCN, Texas A. & M. University and FAO.

Effects of Recreation, Tourism and Related Activities

A survey to determine the extent of previous or continuing investigations is proposed as the initial stage of the development of projects in this series which will be developed in co-operation with the Caribbean Conservation Association, and the IUCN Commissions on Ecology and Environmental Planning. The resulting projects will be closely co-ordinated with the Man and Biosphere (MAB) Programme.

Scientific and Educational Tourism

A series of projects is being elaborated concerned with devising ways of channeling the trend of increased tourism, particularly towards scientific and educational ends. The projects will be concerned especially with delicate ecosystems - particularly island ecosystems - where increased tourism threatens extensive damage. They will be concerned with bridging the gap between the users of resources, especially scientists and educators, and the managers of the same resources who wish to keep them as highly productive as possible in perpetuity.

The final definition of projects must await the outcome of the exploratory phase, the definition of the objectives and methodology of the series, but the following topics seem to require examination: a code of ethics for tourists with a scientific interest; sources of funding for those who manage scientific and educational resources; an information service indicating the opportunities that are offered, including the promotion of certain areas or types of tours; the setting up of a fellowship and fund for administrators and others connected with the management of these resources, so that they can visit other areas; and a series of publications, including handbooks, guidebooks, lists of 'approved agencies' and so on.

CONSERVATION OF BIOTIC COMMUNITIES

In line with IUCN policy, work has been carried on at an accelerating pace in a number of directions connected with monitoring of biotic communities and species populations.

Elaboration of the four Red Data Book volumes on endangered vertebrates has been continued; Volume 1 - Mammalia is being completely revised and is due for publication in 1972 (see below).

The proposal that an Amber List of depleted species of vertebrates should be published separately has been dropped; instead it has been decided that sheets on decreasing species, printed on a distinctively coloured paper, should be included in the Red Data Book.

The accumulation of material for the Red Data Book volume on Angiosperms has continued. In addition, a project concerned with the preservation of threatened species of European vascular plants has been devised, which will result in the publication of an atlas and data book (see page 56).

Work has begun on the 3rd edition of the UN List of National Parks and Equivalent Reserves (see page 56). An improved presentation, based on ecological principles, is being developed by Dr R. F. Dasmann (see page 48).

A number of other projects concerned with conservation of particular communities have been evolved.

Red Data Book

Efforts were made to define the goals of IUCN's threatened species programme, and to standardize procedures for implementing projects. The most difficult task was to identify the threatened species and determine their status, and to provide up-to-date information relevant to their conservation.

It was decided that particular attention should be given to the development of more objective criteria for including species in the Red Data Book; a standard procedure for surveying the status of species recommended for inclusion; a more effective network of correspondents to provide data; more effective methods for assigning priorities of need and for selecting projects; and a system for the review of the effectiveness of any action taken.

A standard inventory form was designed for the acquisition of the minimum basic data necessary for an appraisal of the status of a species

likely to be included in the Red Data Book. The format of the Red Data Book was then reorganized to permit the data from the inventory forms to be easily transferred to the Red Data Book pages.

Sample sheets, prepared according to the new format, and suggested criteria for categorizing threatened species for inclusion in the Red Data Book were discussed at the 38th Meeting of the Survival Service Commission, which was held at Bâle on 12-13 October 1971. The revised format was accepted and the proposed categories were reviewed and revised. As a result some new definitions had to be written. The position now is that, first, those taxa which are believed to be not immediately endangered but which, although still fairly numerous, have been recently and still appear to be suffering a significant depletion in numbers or a significant loss of habitat will be included in the Red Data Book on amber-coloured pages. Secondly, taxa whose world population is very small, but which are not at present endangered or decreasing, and are not considered to require additional conservation measures, will be entered on white sheets; while, thirdly, those which are now restored to safe levels and for which adequate protection has been provided will be on green sheets. Fourthly, those taxa which are believed to be currently threatened with extinction, and whose survival is unlikely without early implementation of conservation measures, will be entered on red pages. Finally, taxa which have been recommended for inclusion in the Red Data Book, but for which additional data are necessary for the appraisal of their status, will be included as a supplementary list on grey paper.

At the close of the year work was well underway reviewing filed information, seeking new information where data are lacking, reappraising placements in the light of the new categories and definitions, and preparing pages for the new edition of the Red Data Book, Volume I - Mammalia.

Threatened Plants

IUCN has consolidated its work in connection with threatened plants. The reorganization and reactivation of the Orchid Group of SSC was proposed during the course of 1971, and increased support for the Red Data Book on Angiosperms was sought from the pharmaceutical and medical industries.

It was further decided an action programme for succulent species should be drawn up. A specialist at Reading University, U.K., is being consulted.

Finally, a project concerned with the preservation of threatened species of vascular plants in Europe has been devised. An atlas and data book of these species, including those considered rare, will be compiled, and recommendations made for the conservation of sites essential for their preservation. An IUCN Working Group will be set up to provide the necessary data and its activity will be co-ordinated and implemented by one or two full-time research assistants attached to a suitable botanical institute. Lists of endangered vascular plants have already been compiled in many European countries, and this project is primarily concerned with translating this information into suitable conservation action on an all-European basis.

Continuous Review of the UN List of National Parks and Equivalent Reserves

The project has three objectives: to monitor the conservation status of national parks and equivalent reserves; to provide an up-to-date reference work listing national parks and equivalent reserves; and to assist in the task of preserving representative ecosystems. Obviously it is essential that the UN List is kept up to date if it is to serve these needs satisfactorily, and the project aims to do this within the framework of IUCN's wider effort to monitor threatened species and biotic communities. It is also clear that the List will have to include much more ecological data if it is to be an effective tool for the task of conserving natural and cultural areas. Data for a third, loose-leaf edition have continued to be accumulated, and it is planned to publish the sheets on newly established parks by the time of the Second World Conference on National Parks, in September 1972.

In reviewing the contents of the existing list it has become clear that few existing parks conform to the ideal definition of a national park adopted by IUCN at the 10th General Assembly. For this reason, IUCN has been attempting to elaborate a more comprehensive classificatory system. Two main classes of national parks and equivalent reserves are proposed: natural reserves and cultural reserves. The former are divided into four categories depending on the non-use or increasing amount of use of the reserve by visitors; and the latter includes all sites modified by man that have great archaeological, aesthetic or scientific value. They might thus include farmland, villages and even, in some instances, towns.

Further information will be needed on the purpose, intensity of use and management of the individual reserves before such a classification can be used, and this information is being sought.

List of Marine Parks

During the year, the above project was elaborated, and will involve the preparation and publication of a list of Marine Parks in loose-leaf form, and its subsequent continuous review. Such a list will be a valuable working tool for all concerned with the conservation of marine ecosystems and habitats. No such list exists at present and there is a general dearth of information on reserves and their status.

IUCN Continuance of the IBP-CT Checksheet survey

IUCN has accepted responsibility for the continuation of the IPB/CT check sheet survey of representative terrestrial ecosystems (part of the work of the Conservation of Terrestrial Communities subcommittee of the International Biological Programme) following the phase-out of the IBP activities. Arrangements have been made for IUCN involvement in the data bank established as the Biological Records Centre of the Nature Conservancy, at Monks Wood, in England. IUCN is now assisting in the completion of modified check sheets in areas where its contacts are good.

Liaison with Biome Field Stations in Isolated Areas

This project covers arrangements for maintaining liaison with biome field stations engaged in long-term research on undisturbed terrestrial biomes in isolated areas, with special emphasis on those in developing countries. It has three objectives: to enable such stations to participate in international programmes concerned with monitoring undisturbed natural areas; and to augment data sources relevant to the monitoring of threatened species and biological communities. The draft working list of such stations which was proposed by IBP/CT is currently being revised at the IUCN Secretariat for publication.

Handbook on Park Planning and Management

This project covers the preparation and publication of a handbook providing guidelines and reference material for those involved in the planning, establishment and administration of national parks and equivalent reserves. The text will include case studies and model decrees, and review most of the problems that occur in national parks activities. It is proposed that it will contain a review of training courses for parks personnel; a review of possibilities for technical assistance, particularly for developing countries; a list of national parks services and associations; and a glossary.

The handbook will be produced in loose-leaf form so as to allow periodic changes and additions, and initially it will be prepared in English. It is proposed that subsequent French and Spanish editions will be produced.

Planning for Man and Nature in National Parks

This handbook, written for IUCN by Professor Richard R. Forster of the School of Landscape Architecture, University of Guelph, Canada, is the first of a proposed series of reports providing reference material and guidelines for those involved in the planning and administration of national parks. It deals with the special problems of tourism and related facility development in connection with national parks, and also contains an analysis of the common pitfalls of planning and development. Principles and guidelines for preparing management programmes are set out and discussed.

Establishment of Tai Forest National Park, Ivory Coast

As mentioned in the IUCN Yearbook for 1970, IUCN/WWF was able to send Professor Urs Rahm of Basel to the Ivory Coast in order to make contact with the local authorities and to carry out a preliminary survey of this unique West Africa forest. Subsequently to Professor Rahm's mission the Ivory Coast Government created a Secretary of State for National Parks and the Protection of Nature. Although this Secretariat remains part of the Ministry of Agriculture, the Parks and reserves of the country are now the responsibility of a largely independent agency, a policy which has always been favoured by IUCN, and which was specifically recommended by Professor Rahm in his report.

As a further development, a member of IUCN's Research and Planning Group visited the Ivory Coast at the end of 1971. His programme includes a visit to the heart of the Tai Forest with a small team of French scientists, and a mission for UNESCO's ecological programme on the new Kossou lake. It is hoped that his visit enable him to establish closer links between IUCN and the new Secretary of State, and with the equally recently created Ministry of Scientific Research.

Coordination of Conservation in Madagascar

Since the 'Premiere conference international sur l'utilisation rationnelle et la conservation de la nature' which was held in Tananarive on 7-11 October 1970, two IUCN/WWF Projects have been prepared. These are No. 799, Protection of Andohahola Strict Nature Reserve and No. 800, Protection of Nossy Mangabe Reserve, which were prepared by Dr Jean-Jacques Petter. They have been endorsed by the Malagasy Government, and funding is being sought from WWF.

Dr Petter will visit Madagascar early in 1972 on a three-month UNESCO Mission (under the Participation Programme) following a request from the Malagasy Government. His visit will be concerned with reconnaissance, study and surveillance of Madagascar ecosystems in relation to the MAB Programme.

Protection of Andohahela Strict Nature Reserve, Madagascar

This project covers arrangements for improving the protection of Andohahela Strict Nature Reserve against cattle grazing and other forms of human encroachment. This reserve is one of the most interesting in Madagascar. It covers an area of 76,000 ha, and is of special significance because it straddles two markedly contrasting climatic zones, the transition occurring within only a few kilometres. A very primitive fauna is present, and there is also a rich primitive flora.

The Malagasy Government was therefore requested to strengthen the protection of the reserve, formerly patrolled by a single guard, by appointing two further full-time guards. This they have agreed to do; and it is proposed to provide for fencing, transport for the wardening staff, and for restoring the old house.

Survey of Potential Conservation Projects in Northern Greece

This project covers the formulation of a plan for conservation in northern Greece, including the location of sites for national parks and other reserves, and proposals for the management of such areas. An initial survey, with special emphasis on wetlands, has already been completed. The wetland area at Mikra Prespa, near the Albanian and Yugoslavian borders has become a waterfowl nature reserve under the protection of the Greek army.

Further development of proposals for conservation action in the case of an area at Evros is awaiting comments from the Greek Government.

Costa Rica

A survey of potential national parks and reserves is planned to be undertaken by an international team of scientists in Costa Rica, and will conclude with a report to be used as a basis for an action programme to be implemented by the Costa Rican Government. Costa Rica's national parks programme is trying hard to keep ahead of alternative land uses in order to preserve the country's natural heritage, while at the same time providing guidance in sound resource development.

The National Parks Department has already managed to set aside and begin development of four major park and equivalent reserves. Several other potential park sites are considered to have top priority but, until recently, the National Parks Department had neither the money nor the staff to initiate studies leading to the preservation of these areas. Among areas suggesting themselves as potential sites are the Talamanca Mountains, Osa Peninsula, Cordillera de Guanacaste, Tempisque River Basin, and the Rio Frio region. Recently, a team of international environmental experts, affiliated to the Tropical Science Centre in San Jose, offered to conduct the pilot study of potential park sites and reserves if funding could be obtained. The Costa Rican Government fully backs this project, and will largely guide its future plans on the ensuing report.

Establishment of Volcan Baru National Park, Panama

This project covers an ecological survey of a cloud forest in the Volcan Baru region (which, incidentally, includes the highest mountain) of Panama; delimitation of a potential national park in the region; and prepa-

ration of reports and material for the setting-up of the park. Reports prepared by FAO consultants working in the same area will lead to the declaration of the park and its subsequent proper management.

The reason for this project is that rapid destruction of the cloud forest biome in Central America and Mexico has taken place during the past 30 years. The vegetation is of outstanding scientific interest, and forms the habitat of the rare quetzal *Pharomacrus mocinno*, the Horned guan, and other unusual and rare fauna. The area also offers particular attractions because of its exceptional scenic and recreational values for both tourists and naturalists. The principal investigator will be Dr Anne LaBastille of Cornell University, who will be assisted in the field study to be undertaken early in 1972 by a wildlife photographer. One to three Panamanian technicians and field assistants will also take part in the field studies, which are expected to occupy four or five weeks.

CONSERVATION OF TAXONOMIC GROUPS

The objectives of IUCN with regard to wild animals have progressively widened over the years so that now in addition to the 'fire brigade' actions to prevent species extinction, increasing attention is being paid to the rational use of wildlife and the maintenance of genetic diversity. The depleted species unit became fully operational in 1971 and work began on a complete revision of Volume 1 of the Red Data Book - Mammalia, incorporating the new category of 'decreasing species'.

Work continued on the draft Convention of Export, Import and Transit of Certain Species of Wild Animals and Plants; and a project was initiated, with the help of the Frankfurter Zoologische Gesellschaft, on the regulation of acquisition of live specimens of threatened species.

Meetings of the SSC Marine Turtle Group and the Crocodile Group were held in March, resulting in a series of action programmes in each case; and an intergovernmental meeting on the vicuna was held in Lima, Peru, in December, 1971, with the collaboration of the SSC Vicuna Group. Two Task Forces were established to look into the conservation requirements of the Gir lion and the Sumatran rhinoceros.

Projects initiated during the year included status surveys on leopard, cheetah, jaguar and ocelot, and a captive breeding programme and

establishment of a reserve for the golden marmoset in Brazil; a status survey of South American crocodilians; conservation of sea turtles in various parts of their range; co-ordination of threatened deer conservation; projects on the captive breeding of the Houbara bustard; and the establishment of a cloud forest reserve for the quetzal. Conservation programmes for seals and wolves were also elaborated, and work on these will begin in 1972.

Statements of IUCN policy on whale conservation, the pet trade and relations with the fur industry were also prepared and published.

Primates

A number of primate field projects have been generated over the past two years and are either seeking funding or are being implemented with outside funds. One of the Latin American projects, which is being partially funded by WWF, concerns captive breeding of the lion marmosets, genus *Leontideus*, and the establishment of reserves for the three species.

Members of the Primate Group are involved in some of these projects and general co-ordination has been assured by the Secretary, Mrs Barbara Harrisson.

Whales

A number of international meetings took place in June 1971 on the conservation of whales. The International Conference on the Biology of Whales, arranged and conducted by the Marine Mammal Council of the U.S. IBP and jointly organized by the U.S. Department of the Interior, Smithsonian Institution, New York Zoological Society and IBP, was held at Luray, Virginia, on 10-12 June. The 23rd Annual Meeting of the International Whaling Commission, took place in Washington D.C., on 21-25 June, and was preceded by a meeting of the Commission's Scientific Committee on 14-18 June. The opportunity was taken at Luray to hold a meeting of the SSC's Whale Group on the evening of 11 June.

This meeting, at which the Group Chairman, Professor M. Nishiwaki, and eight members were present, confirmed that its principal function, as advisory body to the IUCN, was to provide data and impartial comment on the study and conservation of all members of the Cetacea. It will make recommendations for action; initiate investigations; and compile and disseminate information on whales, through the parent body.

An article compiled by members of the Group, which attempted to assess objectively and definitively the current status and management situation of the great whales, appeared in the October/December issue of the IUCN Bulletin (vol. 2, No. 21: 185-189), together with a statement on IUCN's policy with regard to whale conservation. A draft report on the status of small cetaceans is currently being prepared.

Wolves

The Specialist Group on wolves was established during 1971 with 16 members from 14 countries. Specialists are still being sought for Turkey and Greece. The Group hopes to initiate a world programme for the conservation of wolves, which will include research and management projects, as well as efforts to improve the understanding and appreciation of wolves as important and useful elements of natural ecosystems. The planning for this programme will take place in Canada, in connection with IUCN's 11th General Assembly in September 1972.

Polar Bears

Since the second meeting of the Polar Bear Group in February 1970, Norway has introduced a system of quotas for polar bear hunting on Svalbard, and has prohibited the use of setguns and aircraft. Three hundred permits were issued for 1970/1971: only 116 bears were actually taken. The quota of permits for trophy hunting was substantially reduced in Alaska (203 bears were taken in 1971 as against 316 in 1970) and it is probable that hunting from aircraft will be banned in 1972. The Canadian province of Newfoundland and Labrador has prohibited the killing of polar bears for an unlimited period, and a number of provinces have a system for identifying polar bear pelts to prevent illegal traffic. USSR continues to prohibit hunting totally, and more stringent protection for denning areas has been introduced in certain parts of Siberia. Plans for a national park in northeast Greenland progressed considerably.

These items were reported in the newsletters published by IUCN on behalf of the Group with the purpose of keeping members up-to-date on polar bear matters between meetings.

Cats

Two important distribution and status surveys were launched towards the end of 1971. The International Fur Trade Federation in consultation with the SSC agreed to request its member associations to implement, as from 1 September 1971, an indefinite ban on trade in skins of tiger, snow leopard and clouded leopard, and two species of South American otter, as well as a three-year moratorium on trade in leopard and cheetah skins. They also undertook to participate in status surveys on the last two species named and on the jaguar and ocelot, species for which they felt more data was needed before they could agree to include them in the agreement.

The IFTF made available half the funding for the leopard and cheetah survey, and Mr Norman Myers went to East Africa in October to begin an assessment of the biological, economic and legal status of these cats within their range south of the Sahara. Dr Carl Koford was enabled to begin work on a similar study of the jaguar and ocelot in parts of South America through generous grants from the Frankfurter Zoologische Gesellschaft, the Fauna Preservation Society and the WWF. Unfortunately, these two projects remain only half-funded.

Dr Maurice Hornocker, a member of SSC's Cat Group, is planning an intensive research study of the leopard which will provide a scientific basis for effective management and conservation of this species, culminating in specific recommendations for conservation action throughout its range. It will provide an important follow-up to the status survey.

Preliminary ideas were being discussed for a long-term management programme of the Bengal tiger in India, in accordance with Resolution 15 of IUCN's 10th General Assembly.

The preliminary study on man-eating tiger problems in the Bangladesh Sunderbans, the reconciliation of tiger conservation with human occupation of the area, and proposals for a National Park were completed during February and April with a grant from WWF. Dr Hendrichs found that the behaviour of tigers towards men ranged from giving way even if encountered at a close range in "defence situations" to circling round a work-camp for days at a time trying to kill a man. He found that in some areas casualties were nil, in others heavy. In all these areas, there were regions which were heavily worked for timber and others with very few or no human inhabitants. He considered that the west and southwest Sunderbans should be selected as the future National Park since it is here that the highest proportion of tigers occurred that killed readily if molested. A large number of avoidable casualties could thus be eliminated. This is also the area of least economic importance.

Dr Hendrichs will follow up this brief survey with a longer study on the causes of man-eating (water salinity is suspected). This will lead to a better understanding of the ecological factors which cause tigers to be ferocious, and to suitable management measures necessary to conserve the species without excluding human activities from the forest.

Seals

After consultation with the SSC Seal Group, IUCN was able in January 1970 to advise the Governments of Canada and Norway that the overall quota of 245,000 seals for the harp and hood seals in the "Gulf" and "Front" areas, off the east coast of Canada, was too high. A committee was subsequently set up in Canada which examined the situation closely and recommended that the Canadian and Norwegian Atlantic seal hunt be phased out by 1974, followed by a minimum six-year moratorium on hunting. In anticipation of the report, the Canadian Government had banned the taking of seals in the Gulf of St. Lawrence in 1972, apart from landsman's harvests, and had, with Norway, fixed an overall quota of 150,000 seals for the "Front" area.

A meeting on threatened seals will be held immediately after a Seal Symposium at Guelph, Ontario, Canada in August 1972. This is designed as a first step in formulating a series of projects to improve the status and management of seals whose world populations are threatened with extinction or have seriously declined. Papers will be presented on each of the species appearing in IUCN's Red Data Book - Mammalia and two important papers will be compiled on the general status of all seals in the northern and southern hemispheres.

Vicuna

The First International Technical Conference on Conservation of Vicuna, which was held at Lima and Nazca, Peru, on 13-17 December 1971, was organized by IUCN in collaboration with the Direccion General Forestal de Caza y Tierras del Ministerio de Agricultura of Peru, FAO, and WWF. Delegates from Argentina, Bolivia, Chile and Peru took part, as well as representatives of various national and international organizations.

In ancient times the wild vicuña of the high Andean region was rationally managed for its fine wool, fur and meat, with many thousands of these

animals living in areas where other species were not competitive. Today its survival is threatened because of irrational exploitation, largely in response to market pressures. Rational management would be of enormous importance in promoting the general development of high Andean regions and improving the quality of life of the generally less-favoured peoples who live in the areas where the vicuña occurs.

However, the Conference made it clear that before any commercial exploitation based on sound ecological principles could become operational, it is absolutely essential that the critically low population levels be raised to numbers that would definitely place this animal beyond any threat of extinction. The delegates and experts agreed on a declaration of principles, plus nine detailed recommendations including protection, law enforcement, educational programmes, intensified ecological research, studies of related sociological factors, tourism development, international cooperation on a variety of matters, and the establishment of joint research and development activities in the countries where the vicuña occurs.

The Declaration of Principles and Recommendations will be published by IUCN early in 1972.

Subsequently to this meeting, the Bolivian Government declared as a National Park an area, known as Ulla Ulla, adjacent to the Peruvian Cojota National Park. The equipping of this Park is being financed by the Frankfurter Zoologische Gesellschaft and the WWF.

Deer

In June 1971, interested Governments and independent experts were contacted for information on the current status of their threatened deer species and to stimulate, where necessary, an interest in conducting research on the status, biology and management of these deer. Appropriate departments of the following governments have already confirmed an interest in the programme: Afghanistan, Algeria, Bolivia, Brazil, Chile, Corsica, Jammu and Kashmir, Madyha Pradesh, Nepal, Paraguay, Ryuku Islands, Taiwan, Tunisia, Uruguay, Uttar Pradesh, USSR, and Vietnam. Programmes are already underway in Iran, USA and USSR for deer with which SSC is concerned.

Ecological studies leading to recommendations for effective management are already being implemented as part of this project. A study on the southern race of the Swamp deer began in Kanha National Park, Madyha Pradesh, in March 1971. A second study is due to start on the hangul in

Kashmir in June 1972. Both projects are being undertaken by Ph. D. students from the University of Zurich under the direction of Dr Fred Kurt and with funding from the Swiss Alpine Research Institute and the WWF. A further study is about to begin on the Chilean pudu by Dr Richard Tabor.

Kouprey

In view of the prevailing situation in Cambodia, no progress has been made with this project.

Birds

As in the past, the International Council for Bird Preservation has been involved in all matters relating to the conservation of avian species. Two joint projects have been drawn up in close collaboration with ICBP, the first on the establishment of a cloud forest reserve for the quetzal in Guatemala, and the second a captive breeding project on the Houbara bustard. Both will be implemented during 1972 since funding is available from outside sources.

Crocodiles

As reported on p. 44 of the 1970 IUCN Yearbook, the first meeting of SSC's Crocodile Group was held in March 1971, in New York, with major support from the New York Zoological Society, the Fauna Preservation Society and the World Wildlife Fund. High priority was given to captive breeding programmes for some of the most endangered species, including the Orinoco crocodile, Morelet's crocodile and the gavia. It was therefore pleasing to learn that 21 Morelet's crocodiles had been hatched in the summer of 1971 under the care of one of the Group's consultants.

It was recognized that a well-managed crocodile hide industry was an incentive to preserving stocks and that strong efforts should be made by governments to control cropping.

Some useful projects for status and distribution surveys were forthcoming from the meeting; most still require funds, but a survey on South American crocodylians has been supported by the New York Zoological Society and is at present under way.

A small newsletter is published regularly by the Group.

Marine Turtles

The Second Working Meeting of Marine Turtle Specialists, organized by the Survival Service Commission of IUCN, and mainly financed by WWF took place on 8-10 March 1971 in Morges. Plans were made for a continuing conservation and research programme on marine turtles which, incidentally, are all listed in the Red Data Book Volume 3 Reptiles.

Four main areas of research were thought to be of special significance: mapping of group nesting sites, particularly in undocumented areas of Australia, Africa, Indonesia and South America; captive breeding techniques; population ecology and energy flow studies; and taxonomic/Zoogeographic studies.

The Group agreed to serve as a special consultative body to advise governments on the conservation of their marine turtle resources.

The presence of representatives from industry was welcomed, and plans were made for the exchange of information on captive breeding.

The detailed deliberations of the meeting have been published as IUCN Supplementary Paper No. 31. Furthermore, as foreshadowed in the report in the 1970 Yearbook, p. 51, the first marine turtle monograph has now been published as IUCN Monograph No. 1, and is an account of the leatherback or leathery turtle *Dermochelys coriacea*.

Zoos

SSC's Zoo Group continued to act in a liaison capacity between IUCN and national zoo federations or major national zoos. Plans were formulated for reorganizing the Group, with the possibility of holding the occasional meeting for greater contact and exchange of views. Zoos have an important role to play in educating the public, conducting research, financing conservation projects and breeding endangered species for the purposes of exchange, thus taking pressure off wild stocks.

ENVIRONMENTAL EDUCATION

During the year considerable progress was made in developing projects in environmental education. Particular interest was taken in the development of comprehensive programmes of conservation education in all types of courses and at all levels. The range extended from pre-school to post-graduate studies. Action was taken in the setting up of general guidelines, their further elaboration, and final implementation; in the organization of conferences and meetings; and in the preparation of publications.

The most important educational venture of IUCN in 1971 was the first European Working Conference on Environmental Conservation Education which was held at Rüschlikon, Switzerland, from the 15 to 18 December. Some 109 educationalists and scientists took part and it was judged to be a great success.

From 30 August to 5 September 1971, under the auspices of the North-West Europe Committee of the Commission on Education, the ninth Regional Conference on Environmental Education in North-West Europe was held at Rotterdam, Netherlands. The principal theme of the meeting was 'Environmental Education in an Urban Society', and the keynote address was given by Dr J. Verhoeve, Director-General of Public Education and Recreation, of the Netherlands Ministry of Culture, Recreation and Social Welfare. Two days were set aside for an environmental education seminar for a broader audience. The proceedings of the Conference will be published by the Netherlands Ministry of Culture, Recreation and Social Welfare within IUCN Publications New Series, Supplementary Papers, during 1972.

A working group for Central and East Africa was established during the year, and had a successful meeting at Livingstone, Zambia, on 20-23 November 1971.

European Working Conference on Environmental Conservation Education

This project was concerned with the most important educational venture at which IUCN took a leading part in 1971 - the first European Conference on Environmental Conservation Education. It was attended by specialists on environmental education - scientists, administrators, teachers and others involved in education - and in addition to clarifying general

concepts, surveying the present situation and pointing out the needs, it formulated specific recommendations for projects and programmes.

It was organized by IUCN in co-operation with WWF, and with the support of the Swiss Federal Authorities, the Canton of Zurich, the MIGROS-Genossenschafts-Bund, the Swiss League for the Protection of Nature, the Swiss National Appeal of WWF, and the Swiss National Commission for UNESCO. The venue was the Gottlieb Duttweiler Institute, Rüschlikon, near Zurich, Switzerland, and the Conference lasted from 15-18 December 1971.

A total of 109 participants from 21 European countries attended (Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Greece, Italy, Luxembourg, Netherlands, Norway, Poland, Rumania, Spain, Sweden, Switzerland, UK, USSR, and Yugoslavia), together with representatives of nine international organizations (United Nations, UNESCO, FAO, Council of Europe, OECD, IUBS, Boy Scouts World Bureau, IYF and the Mediterranean Association for Marine Biology and Oceanography). Observers from three countries in other parts of the world (Australia, Canada and USA) were also present.

The Chairman of the Conference was Dr L. K. Shaposhnikov, USSR, who guided its programme of work through topic-oriented plenary sessions. Smaller working groups considered important areas of environmental education. At its conclusion the participants considered that it had provided an invaluable opportunity to exchange information on methodology and implementation, and the Conference as a whole proposed practical programmes in environmental education adapted to meet the needs of education systems in a wide variety of situations.

International Seminar on Environmental Education in the Schools in Eastern European Countries

The object of this project is to focus attention on environmental conservation education at the primary and secondary school levels in Eastern European countries, and to find ways of increasing the amount of such education in school programmes. The Seminar will take place at Pieniny National Park from 22-28 June 1972, and will be organized by the East-Europe Committee of the IUCN Commission on Education. Dr T. M. Szeszny of Poland and Ing. M. Hirs of Czechoslovakia will be the chief organizers, and will be assisted by the IUCN Secretariat.

Methods Handbook on Environmental Conservation Teaching in Primary and Secondary Schools

Work has started on this project, which is being funded by UNESCO on a contract basis. Professor R. N. Saveland of the University of Georgia, Athens, USA, has been appointed head of the Task Force, and editor of the handbook. Two meetings of experts have been held, the first at Hamilton, Canada, from 20-30 August 1971, and the second at Rüschnikon and Zurich, Switzerland, from 16-19 December 1971. It is hoped that the manuscript will be completed before the end of July 1972.

Methods Books on Important Forms of Environmental Education

This project, which will be co-ordinated with UNESCO, is for the production of books dealing with various aspects of environmental education. It will bring together and evaluate existing materials and experiences, and develop various methodologies. A number of titles have been suggested and progress is being made.

Methods Handbook on Environmental Conservation Teaching in Higher Education in the Eastern European Socialist Countries

This project was set up to prepare and publish a handbook giving information on establishments and courses in environmental studies in Eastern European countries. The handbook will be published simultaneously in Russian and German. Work on it has steadily progressed during 1971.

International University Manual on Environmental Conservation

Although no notable developments occurred during 1971 with regard to this project, work has steadily continued.

International Conservation Posters Competition for Children and Young People - 1971

From 15 August to 20 September 1971, visitors to the District Gallery in the House of Arts at Gottwaldov, East Moravia, Czechoslovakia, were able to see 98 posters drawn and painted by children and young people

from seven European countries. These were selected from 3,320 submitted to the organizers - Zoopark and Castle Lesna - by young artists from Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Rumania, USSR and Yugoslavia.

The entries were judged by a jury of art teachers, conservation publicity and educational specialists, and practising artists. It was agreed that the competition fully achieved its educational, conservation and cultural aims, and it will be evaluated from the point of view of environmental conservation education.

Selected posters were displayed at the 1971 European Working Conference on Environmental Conservation Education at Rüsçhlikon, and will be shown later in the other participating countries.

EXTERNAL RELATIONS

The importance of IUCN's links with other international and national organizations cannot be over-stated. While IUCN can and does act on its own in many instances, its role is essentially that of an enzyme. It facilitates and encourages action to conserve nature and natural resources by governments, other international agencies, and by national organizations. Increasingly, efforts at conservation are becoming multi-disciplinary and multi-national, and co-ordination of these efforts is a prime necessity. During 1971, therefore, IUCN's existing relationships with other organizations were reinforced, and new strands in the web were developed. Some are now firmly in place and functional, others have yet to be completed. In particular, IUCN's links with elements of the UN complex in New York and Geneva, including the Economic Commission for Europe, and with UNESCO, FAO, UNIDO, WHO and WMO have all been strengthened and extended. In the following pages, some of IUCN's activities with regard to its organizational environment are highlighted.

WWF

An account of the extremely close working relationship with the World Wildlife Fund has been given earlier in the Yearbook (see page 9). Regular meetings are held between the Executive Vice President and the Director General of WWF, and the Director General and Deputy Director General of IUCN to take action on joint management of IUCN/WWF projects and to effect policy co-ordination. Separate liaison meetings are held on matters affecting publicity and education.

It has been accepted that WWF will be responsible for assisting IUCN to obtain the necessary funding for its regular programme over and above the present subvention of \$ (US) 100,000 which has been promised on a continuing basis.

A number of developments have occurred in relation to the acquisition of land at Geneva next to the Botanic Garden for a joint IUCN-WWF headquarters. A new Foundation has been established to handle the various matters relating to the new headquarters, including receiving the ear-marked donation of 10 million Swiss francs for the establishment of the joint headquarters. Entitled "Fondation pour la conservation de la nature et de l'environnement", it will have a board of five comprising a Chairman nominated by la Direction Générale de la Société de Banques Suisses, a second member nominated by the Bank, a representative of IUCN, a representative of WWF, and a representative of the Swiss Federal Government. The sole object of the foundation is to provide for the joint headquarters.

As soon as the necessary building permits are received, action will be taken to commence the design of the headquarters. It is difficult to forecast when the design stage will be finished and the building erected, but it seems unlikely that the undertaking will be completed before 1975.

UNESCO

During 1971 IUCN's working relationship with UNESCO was strengthened through a number of actions. At the 87th Session of the Executive Council of UNESCO, IUCN was placed in Category A of organizations with which UNESCO maintains "consultative and associate relations". IUCN is honoured by the action of the Executive Council, as it reflects the importance of the working links that have been established between the two organizations.

IUCN has been involved in the planning of UNESCO's Man and the Biosphere Programme (MAB). This programme was officially adopted at the UNESCO General Conference in November 1970, and was launched following the meeting of the Coordinating Council, 9-19 November 1971, in Paris. This meeting which established priorities, defined the structure and content of the first programme, and provided the necessary guidelines for the first stages of its implementation in Member States, was attended by the Director General and the Senior Ecologist of IUCN.

The MAB programme comprises 13 projects, most of which are relevant to IUCN. IUCN supports the programme and expects to be involved in the execution of some of the projects under appropriate contractual arrangements.

IUCN has worked closely with UNESCO on several other projects,

including the International Youth Conference on the Human Environment, Hamilton, Canada (see p. 33); the Second World Conference on National Parks, which UNESCO will co-sponsor and support (see pp. 25); and the joint UNESCO-FAO-IUCN paper on wildlife and several related aspects of resource management for the UN Conference on the Human Environment, to be held in Stockholm in June 1972 (see p. 26).

There is also a close working relationship between UNESCO and IUCN in the field of environmental education; for example, IUCN was invited to participate in the UNESCO African Regional Seminar on the Promotion of Knowledge of Science and Technology, which was held in Lusaka, Zambia, on the 15-19 November 1971. One day of this meeting was devoted to the subject of conservation of nature and natural resources, with a representative of IUCN in charge of preparing the day's programme. Following the Lusaka meeting, UNESCO joined with IUCN in the latter's interterritorial meeting in Livingstone on 20-23 November, to discuss and prepare programmes related to the Project on Co-ordination of Environmental Education in Central and East Africa.

UNESCO also participated in the European Working Conference on Environmental Conservation Education at Rüschtikon on 15-18 December 1971, and provided valuable documentation (see p. 69). Furthermore, contract support is being made available for the Project on a Methods Handbook on Environmental Conservation Education in Primary and Secondary Schools (see p. 71).

IUCN receives financial support in the form of a subvention from UNESCO, which is used in part for the printing of publications.

FAO

IUCN works closely with the Food and Agriculture Organization (FAO) of the United Nations, in particular with the Forestry and Fisheries Department, on topics of mutual interest. In many instances IUCN has stimulated proposals for projects within various countries, which are then carried forward by FAO. FAO in turn keeps IUCN informed of situations in which interventions by a non-governmental organization would be useful. In addition FAO and IUCN collaborate in the sponsorship of meetings and conferences, and in providing facilities for such gatherings.

FAO is collaborating on the Second World Conference on National Parks to be held in September 1972; and with UNESCO and IUCN produced a paper on wildlife and several related aspects of resource management for the UN Conference on the Human Environment. There

has also been very close co-operation between the Union and FAO in connection with environmental legislation.

UNIDO

At the fifth session of the Industrial Development Board of the United Nations Industrial Development Organization (UNIDO) held on 24-28 May 1971, IUCN was granted consultative status with UNIDO in accordance with Rule 76 of the Rules of Procedure of the Board. Such consultative status involves the representation of IUCN by an observer at meetings of the Board, its Committees and subsidiary organs, and participation in their work.

During the year IUCN prepared a paper on Industrial and Environmental Disturbances for UNIDO, in preparation for the UN Conference on the Human Environment.

WMO

During 1971, IUCN was granted consultative status with the World Meteorological Organization (WMO) of the United Nations Organization. Such consultative status involves the representation of IUCN by an observer at meetings of WMO, and enhances the already considerable liaison between the two bodies.

IAWPR

At the request of the Governing Board of the International Association on Water Pollution Research (IAWPR), IUCN has established a working collaboration with the Association on various aspects of water pollution research and water quality management.

ICBP

Close co-operation has continued to be maintained with the International Council for Bird Preservation (ICBP), to whom all matters relating to avifauna have been referred. The Council is directly represented on the Survival Service Commission by its Secretary, Miss Phyllis Barclay-

Smith; and Col. Jack Vincent is continuing his work in connection with the Red Data Book Volume II - Aves.

Other Organizations

During 1971 IUCN maintained and increased contact with organizations throughout the world having an interest in various aspects of the environment, as public concern in this field mounted still further.

Among the other intergovernmental organizations with which the Union has had close relationships are the International Bank for Reconstruction and Development, the Organization of African Unity, the Organization of American States, and the Council of Europe.

Liaison has been continued with various international non-governmental organizations including the International Council of Scientific Unions (especially its International Biological Programme and the Special Committee on Problems of the Environment), the Commission Internationale pour la Protection de la Region Alpine, the Conseil Internationale de la Chasse, the Fauna Preservation Society, the International Federation of Landscape Architects, the International Youth Federation, and the Inter-Parliamentary Association.

Close links have also been maintained with many national institutions and organizations including, in the United States of America, the Council on Environmental Quality, the Bureau of Sport Fisheries and Wildlife, the National Park Service, the Conservation Foundation and the Smithsonian Institution; and, in the United Kingdom, with the Nature Conservancy.

Meetings

Once again IUCN has been involved in more meetings, conferences, symposia and other gatherings than in any preceding 12-month period. It has sponsored or co-sponsored many important meetings in widely scattered parts of the world, and has been represented at a far larger number. In both respects the gatherings have covered a wide range of environmental topics, from broad general subjects such as environmental education in various regions and the International Parliamentary Conference on the Environment, to more specific conferences including that on Vicuna Conservation and those on Marine Turtles and Crocodiles.

Such gatherings serve many purposes, not least of which is the opportunity for personal contact. But, of course, scientific information can be exchanged and IUCN's 'message' of the imperative necessity for rational environmental management in all its aspects can be promulgated.

IUCN sponsored or co-sponsored meetings, 1971

January 30-February 3	International Conference on the Conservation of Wetlands and Waterfowl	Ramsar, Iran
July 23-25	International Seminar on Education and Nature	Port-Mort, France
August 1-14	IYF 16th General Assembly and Symposium on Youth Strategy in Environmental Conservation	Filzmoos, Austria
August 4-14	Regional Symposium on Conservation of Nature - Reefs and Lagoons	Noumea, New Caledonia
August 20-23	International Youth Conference on Human Environment	Hamilton, Canada
August 30-September 5	9th Regional Conference on Environmental Education in North-West Europe	Rotterdam, Netherlands
November 2-5	The Behaviour of Ungulates and its relation to Management	Calgary, Canada
November 20-23	Working Meeting on Environmental Education in Central and East Africa	Livingstone, Zambia
December 13-17	First International Scientific Conference on Vicuna Conservation	Lima-Nazca, Peru

Conferences and meetings at which IUCN was represented, 1971

Sponsor	Subject	Venue
Marine Biological Association of India	Symposium on Indian Ocean and Adjacent Seas - Their Origin, Science and Resources	Cochin, India
The Atlantic Council of the United States	Symposium on Goals and Strategy for Environmental Quality in the Seventies	Washington, DC U.S.A.
International Council of Scientific Unions	Meeting of ICSU's Special Committee on Problems of the Environment (SCOPE)	London, England
International Wildfowl Research Bureau	International Conference on the Conservation of Wetlands and Waterfowl	Ramsar, Iran

FAO United Nations	<i>Ad hoc</i> Committee on Forestry Second Meeting of Preparatory Committee for UN Conference on the Human Environment	Rome, Italy Geneva, Switzerland
Wildlife Management Institute Lion Country Safari	North American Wildlife Conference Symposium on Ecology, Behavior and Conservation of the World's Cats	Portland, Ore. U.S.A. Laguna Hills, Calif., U.S.A.
Council of Europe	Groupe de travail sur la Flore, la Faune et les Paysages XV IUFRO Congress	Strasbourg, France Gainesville, Fla., U.S.A.
International Union of Forestry Research Organizations Council of Europe	Working Party for Education and Information Southeastern Conference on Social Sciences in Environmental Education	Strasbourg, France Athens, Ga., U.S.A.
University of Georgia	Sixth Session of World Meteorological Congress Conference on Problems Relating to the Environment	Geneva, Switzerland Prague, Czechoslovakia
World Meteorological Organization Economic Commission for Europe Institute of Man and Aspen Institute for Humanistic Studies United Nations	Conference on International Organization and the Human Environment Conference of Non-governmental Organizations on the Environment Second International Symposium on Chemical and Toxicological Aspects Environmental Quality	New York and Rensslearville, N.Y., U.S.A. New York, N.Y., U.S.A. Munich, Federal Rep. of Germany
Institut für Ökologische Chemie, Forum für Wissenschaft, Wirtschaft und Politik Council of Europe	10th Session of European Committee on Conservation of Nature and Natural Resources	Strasbourg, France
Interparliamentary Working Centre Société des ingénieurs civils de France	International Parliamentary Conference on the Environment Congrès international Science et Technique de Tan 2000 (held at Unesco)	Bonn, Fed. Rep. of Germany Paris, France
FAO German National Commission for UNESCO	56th Session of Council of FAO Interregional Symposium on Man and the Biosphere Programme	Rome, Italy Bonn and Bad Godesberg, Fed. Rep. of Germany
International Biological Programme University of Michigan	International Conference on the Biology of Whales Conference on Asian Environments	Luray, Va., U.S.A. Ann Arbor, Mich., U.S.A.
Charles Darwin Foundation for the Galapagos Isles	Executive Council	Paris, France

Aspen Institute for Humanistic Studies and International Institute for Environmental Affairs	First International Environmental Workshop of Aspen	Aspen, Colo., U.S.A.
International Whaling Commission	23rd Annual Meeting	Washington, DC, U.S.A.
UNESCO Government of Finland, Finnish National Commission for UNESCO and Jyväskylä Arts Festival	Environmental Monitoring Conference International Conference on Environmental Future	Paris, France Helsinki and Jyväskylä, Finland
Economic Commission for Europe	Eleventh Inter-Secretariat Meeting on Water Pollution and Related Water Questions in Europe	Geneva, Switzerland
Council of Europe	Second Symposium of Members of Parliament Specialists in Public Health	Stockholm, Sweden
Aries Festival	Nature Week	Aries, France
United Nations	Science Policy Group	Sussex, England
Francs et Frances	International Seminar on Education and Nature	Port Mort, France
Camarades	Conference on Development and Environment	Geneva, Switzerland
Ford Foundation	16th General Assembly and European Symposium on Youth Strategy in Environmental Conservation	Filzmoos, Austria
International Youth Federation	Regional Symposium on Conservation of Nature - Reefs and Lagoons	Noumea, New Caledonia
South Pacific Commission	Conference on Planned Utilization of the Lowland Tropical Forests	Tjipajung, Bogor, Indonesia
South Pacific Association's Standing Committee on Pacific Botany	Intergovernmental Working Group on Monitoring or Surveillance	Geneva, Switzerland
United Nations	Pacific Science Association Twelfth Pacific Science Congress	Canberra, Australia
Australian Academy of Science	Fourth Session, Advisory Committee on Natural Resources Research	Canberra, Australia
UNESCO	First General Assembly of Special Committee on Problems of the Environment (SCOPE)	Canberra, Australia
International Council of Scientific Unions	Intergovernmental Working Group on Conservation	New York, N.Y., U.S.A.
United Nations	Third Meeting of Preparatory Committee for UN Conference on the Human Environment	New York, N.Y., U.S.A.
United Nations	Tripartite Conference on Coordination of National Parks and Tourism between Uganda, Rwanda and Congo Kinshasa	Kampala, Uganda
Government of Uganda	World Consultation on Forestry Education and Training	Stockholm, Sweden
FAO		

Council of Europe	Groupe de travail sur la Flore, la Faune et les Paysages	Strasbourg, France
World Meteorological Organization	5th Session Commission for Agricultural Meteorology	Geneva, Switzerland
NGO (UNESCO) Standing Committee	13th Conference of International Non-governmental Organizations in Consultative Relations with UNESCO	Paris, France
United Nations Institute for Training and Research UNESCO	Seminar on Documentation of UN System	Geneva, Switzerland
UNESCO	International Coordinating Council for Man and the Biosphere Programme Regional African Seminar on the Promotion of Knowledge of Science and Technology	Paris, France
Council of Europe	Steering Committee of the European Information Centre for Nature Conservation	Lusaka, Zambia
Charles Darwin Foundation for the Galapagos Isles	Executive Council	Strasbourg, France
American Association for Advancement of Science	Symposium on Research in National Parks	Paris, France
		Philadelphia, Penna., U.S.A

Contacts and enquiries

Throughout the year a continual stream of visitors from all parts of the world arrives at the Union's headquarters in Morges. Many come seeking information or advice, others bring valuable information. This facet of the Union's activities seems almost too obvious to be mentioned but, of course, it is vital. It would be difficult in the absence of contact of this kind to carry on IUCN's business, for there must be personal consultations between the Secretariat and experts from many countries and many disciplines who are, in many ways, involved in IUCN's programmes.

Because of the nature of the Union as a centre for environmental information, the documentation work and library of the Secretariat and of IUCN's Environmental Law Centre at Bonn is of great importance. A considerable volume of correspondence is delivered each day to Headquarters, much of it of an official nature, but there is a large and increasing amount from private persons interested in the manifold aspects of the environment. Some letters require a simple and straightforward reply only, but others call for a considerable amount of research before they can be answered satisfactorily. This task is regarded as an essential part of the Union's general information and educative mission, and to assist and simplify the work a number of leaflets and booklets have been prepared.

IUCN ORGANIZATIONAL MATTERS

Commissions

The structure of IUCN's six Commissions remained unchanged except that the Commission on Landscape Planning received the new title of Commission on Environmental Planning. This reflects the far wider scope of its activities, for it is concerned with land-use planning and the various aspects of the urban-rural development cycle as well as physical planning and conservation of landscapes.

Commission meetings were held as follows:

January 14-15	Commission on Education (Indian Regional Committee, Inaugural and First Business Meeting)	New Delhi, India
March 8-10	SSC Marine Turtle Specialist Group	Morges, Switzerland
March 15-17	SSC Crocodile Group	Bronx Zoo, N.Y., USA
April 2-3	Survival Service Commission	Morges, Switzerland
June 11	SSC Whale Group	Luray, Va., USA
June 21	Commission on Ecology: Mountain Committee	Erevan, Armenian SSR/USSR
October 12-13	Survival Service Commission	Basle, Switzerland
December 15-18	31st Meeting Commission on Education	Zurich, Switzerland

The John C. Phillips Medal

The John C. Phillips Memorial Medal for Distinguished Services in International Conservation arose from the wish of the friends of John C. Phillips (1876-1938) and the American Committee for International Wild Life Protection to commemorate the life and work of this distinguished naturalist, explorer, author and conservationist.

The Medal has been awarded three times:

1963: Mr E. M. Nicholson, C.B. (UK).

1966: Dr Enrique Beltran (Mexico).

1969: Shri Salim Ali (India).

Publications

During 1971, four issues of the Quarterly Bulletin were published. The Annual Report appeared for the first time in its new format as IUCN's Yearbook for 1970, and contained very much more information about the work of the Union than formerly. Four publications were issued in the New Series, and three in the Supplementary Papers series. Two Occasional Papers and one Monograph were also published. The complete list is shown in Appendix C.

Financial matters

IUCN's financial position continued to be strengthened by substantial grants made to it for 33 months commencing on 1 April 1970 by the Ford Foundation. This grant, No. 700.0243, was for a total of US \$ 650,000, and provided urgently needed general support for the Union's expanded programme.

The Union is deeply grateful to the Ford Foundation for its generous and opportune assistance.

The World Wildlife Fund also continued its support of IUCN with its annual subvention of US \$ 100,000, without which the Union would be unable to maintain operations on its present scale. As in previous years this generous support is gratefully acknowledged.

UNESCO's annual subvention of US \$ 10,000 was continued in 1971 and assisted IUCN in many phases of its work, not least with publications. The Union wishes to acknowledge this assistance with great appreciation.

Several organizations have contributed to the funding of the research project on the international environmental law information system since 1968. The Thyssen Foundation, the Institut für Dokumentationswesen (Frankfurt, Fed. Rep. of Germany), the Volkswagen Foundation, and the Karl-Schmitz-SchoU-Fonds assisted during the stages involving the input of information. IBM has borne the costs of programming and machine time. The preparation for the demonstration of the system at the UN Conference on the Environment (Stockholm), and subsequently at Vienna, and of the demonstration itself, has been made possible through the joint assistance of the Fund for Environmental Studies (FUST) and IBM.

Miscellaneous grants were received during 1971 from the following sources:

Alexander von Humboldt Foundation
American Committee for International Wild Life Protection
American Conservation Association, Inc.
The Conservation Foundation
The Charles Engelhard Foundation
Miss Susan Engelhard
Fauna Preservation Society
Sir Frank Fraser Darling
F. Hoffmann-La Roche & Co.
International Fur Trade Federation
Jachtfonds Netherlands
New York Zoological Society
Sandoz Ltd.
Schweizerischer Bund für Naturschutz
UNESCO: National Commission for Switzerland
R. T. Vanderbilt Trust
Volkswagen Foundation
Zoologische Gesellschaft von 1858. Frankfurt am Main

We take occasion to acknowledge publicly these grants with our thanks and great appreciation.

Detailed financial data are incorporated in Appendix D.

APPENDIX A

State Members

Belgium	Greece	Morocco
Canada	India	Netherlands
Chad	Italy	Panama
Congo (Dem. Rep. of)	Ivory Coast	Senegal
Dahomey	Kenya	Sudan
Denmark	Khmer Republic	Switzerland
Ecuador	Laos	Thailand
Ethiopia	Luxembourg	United Kingdom
Finland	Madagascar	Vietnam (Rep. of)
Germany (Fed. Rep. of)	Malaysia	Zambia

Organization Members

** The membership of these organizations will be submitted to the 11th General Assembly for ratification.*

Angola	Centro de Documentação Científica, Instituto de Investigação Científica de Angola * Direcção de Serviços Veterinária de Angola * Liga para a Protecção e Conservação da Natureza em Angola
Argentina	Administration General de Parques Nacionales, Ministerio de Agricultura y Ganadería * Comité Argentino de Conservación de la Naturaleza Dirección de Conservación de la Fauna, La Plata Dirección de Recursos Naturales, Paraná * Instituto de Investigaciones de las Zonas Áridas y Semiáridas
Australia	* Association of Zoo Directors (of Australia and New Zealand) Australian Conservation Foundation W. Aust., Department of Fisheries and Fauna N.S.W., National Parks and Wildlife Service Wildlife Preservation Society of Australia
Austria	Österreichischer Naturachztbund Das Referat für Naturschutz und Tierschutz beim Amt der Salzburger Landesregierung
Bahamas	Bahamas National Trust
Belgium	Ardenne et Gaume Institut Royal des Sciences Naturelles de Belgique Jardin Botanique de l'Etat Koninklijke Maatschappij voor Dierkunde van Antwerpen Koninklijke Vereniging voor Natuur- en Stedschoon Musée Royal de l'Afrique Centrale Touring Club de Belgique Université Libre de Bruxelles Université de Liège
Brazil	* Coordenadoria da Pesquisa de Recursos Naturais Fundação Brasileira para a conservação da Natureza Instituto de Conservação da Natureza, Rio de Janeiro
Bulgaria	Commission pour la Protection de la Nature de l'Académie des Sciences de Bulgarie * Ministère des Forêts et de l'Industrie du Bois en RP de Bulgarie
Canada	Canadian Audubon Society Canadian Council of Resource and Environment Ministers, Lands, Forests and Wildlife Service, Department of the Environment

- Carleton University Library
- * Centre for Environmental Biology, Newfoundland
- * Conservation Council of Ontario
- Department of Mines, Natural Resources and Environmental Management, Manitoba
- Federation of Ontario Naturalists
- Ontario Department of Natural Resources
- Les Cercles des Jeunes Naturalistes
- National and Historic Parks Branch, Department of Indian Affairs and Northern Development
- Regional Center for Library, University of Ottawa
- Société Zoologique de Québec

- Ceylon** Department of Wildlife
Wildlife Protection Society of Ceylon

- Chile** Comité Nacional pro Defensa de la Fauna y Flora
* Instituto de la Patagonia

- China (Taiwan)** Tourism Council, Ministry of Communications

- Colombia** * Instituto de Ciencias Naturales
Instituto de Desarrollo de los Recursos Naturales Renovables

- Cuba** Sociedad Cubana para la Proteccion de la Naturaleza y la Conservacion de los Recursos Naturales

- Czechoslovakia** Slovensky ustav pamiatkovej starostlivosti a ochrany prirody
Sprava Tatranské ho narodneho parku
Statni ustav pamatkové péce a ochrany prirodny

- Denmark** Danmarks Naturfredningsforening
Friluftsrådet
Naturfredningsrådet

- Finland** Finish League for the Protection of Nature

- France** Académie des Sciences de l'Institut de France
* Association Nationale de Parcs et Jardins Zoologiques Privés
Conseil Supérieur de la Chasse
* Fédération Française des Sociétés de Protection de la Nature
Fédération Française des Sociétés de Sciences Naturelles
Information et Culture
Muséum National d'Histoire Naturelle, Service de Protection de la Nature
Office de la Recherche Scientifique et Technique Outre-Mer (ORSTOM)
Société Botanique de France
Société Nationale de Conservation de la Nature
Touring Club de France

- Germany (Democratic Republic of)** * Deutscher Kulturbund
* Institut für Landesforschung und Naturschutz Halle (Saale)

- Germany (Federal Republic of)** Arbeitsgemeinschaft Deutscher Beauftragter für Naturschutz und Landschaftspflege
* Bundesanstalt für Vegetationskunde Naturschutz und Landschaftspflege
Bund für Naturschutz in Bayern e.V.
Deutscher Jagdschutz-Verband
Deutscher Naturschutzring
Schutzgemeinschaft Deutscher Wald e.V.
Schutzgemeinschaft Deutsches Wild e.V.
Verein Naturschutzpark e.V.
Verein zur Förderung des WWF e.V.
Vereinigung Deutscher Gewässerschutz
Zoologische Gesellschaft von 1858, Frankfurt a.M.

- Ghana** Department of Game and Wildlife

- Greece** Athens Society of the Friends of the Trees
Club Alpin Hellénique
Société Hellénique pour la Protection de la Nature

Guatemala	* Asociacion "Amigos del Bosque"
India	Bombay Natural History Society Indian Board for Wild Life, Ministry of Food and Agriculture Wild Life Preservation Society of India
Indonesia	Institute for Nature Conservation, Bogor
Iran	* Iran Game and Fish Department
Ireland	An Taisce - The National Trust for Ireland National Institute for Physical Planning and Construction Research of the Department of Local Government
Israel	Nature Reserves Authority Society for the Protection of Nature in Israel
Italy	Azienda di Stato per le Foreste Demaniali Centro di Sperimentazione Agricola e Forestale Consiglio Nazionale delle Ricerche Ente Parco Nazionale Gran Paradiso Istituto Policattedra di Biologia Animale Università di Catania Italia Nostra Laboratorio di Zoologia Applicata all Caccia, Bologna * Parco Nazionale d'Abruzzo Pro Natura Italiana Rete Fenologica Italiana Unione Italiana "Pro Natura"
Japan	National Parks Association of Japan Nature Conservation Society of Japan Society of Biological Sciences Education of Japan
Jordan	National Parks and Historic Monument System of Jordan
Kenya	East African Wildlife Society Kenya National Parks
Korea, North (Republic of)	Korean Association for Protection of Nature Korean Commission for Conservation of Nature and Natural Resources
Lebanon	Biology Department, The Natural History Museum, American University of Beirut Société des Amis des Arbres du Liban
Malawi	Ministry of Natural Resources
Malaysia	Game Branch of the Forest Department, Sabah Malayan Nature Society Sabah National Parks Trustees Sarawak Museum
Mexico	Instituto Mexicano de Recursos Naturales Renovables, A.C.
Mozambique	Direcção dos Serviços de Veterinaria
Netherlands	Contact Commissie voor Natuur- en Landschapsbescherming Koninklijke Nederlandse Natuurhistorische Vereniging Koninklijke Nederlandsche Toeristenbond Koninklijk Zoologisch Genootschap Nederlandse Vereniging tot Bescherming van Vogels Nederlandse Vereniging van Dierentuinen Stichting het Nationale Park de Hoge Veluwe Stichting tot Internationale Natuurbescherming Vereniging tot Behoud van Natuurmonumenten in Nederland Voorlopige Natuurgeschermingsraad
New Zealand	National Parks Authority of New Zealand Nature Conservation Council Royal Forest and Bird Protection Society of New Zealand, Inc.

Nigeria	Federal Ministry of Agriculture and Natural Resources
Norway	Norges Naturvernforbund
Pakistan	* Pakistan Forest Institute
Peru	Dirección General Forestal de Caza y Tierras, Ministerio de Agricultura
Philippines	Parks and Wildlife Office, Department of Agriculture and Natural Resources Philippine Association for Permanent Forests, Inc. Philippine Wildlife Conservation Foundation
Poland	Instytut Botaniki Pan Instytut Zoologiczny Pan Liga Ochrony Przyrody Panstwowa Rada Ochrony Przyrody Polska Akademia Nauk Polskie Towarzystwo Botaniczne Polskie Towarzystwo Lesne
Portugal	Direcção-Geral dos Serviços Florestais e Aquícolas
Rhodesia	Atlantica Foundation Natural Resources Board
Rumania	* Centrul de Informare și Documentare Commission pour la Protection de la Nature de l'Académie de la R.S. de Roumanie
Senegal	Institut Fondamental d'Afrique Noire
Singapore (Republic of)	* Singapore Zoological Gardens
South Africa	Department of Nature Conservation of the Provincial Administration of the Cape Department of Nature Conservation of the Province of Transvaal Natal Parks, Game and Fish Preservation Board National Parks Board of Trustees of South Africa Nature Conservation Division of the Orange Free State Province Nature Conservation and Tourism, Windhoek Percy Fitzpatrick Institute of African Ornithology Wild Life Protection and Conservation Society of South Africa
Spain	Agrupacion Espanola de Amigos de la Naturaleza Federacion Iberoamericana de Parques Zoológicos Servicio Nacional de Pesca Fluvial y Caza
Sudan	Department of Zoology, University of Khartoum Rural Water and Development Corporation
Sweden	The Swedish Forest Service Naturhistoriska Riksmuseet Royal Swedish Academy of Sciences Section des Sciences Naturelles, Nordiska Museet och Skansen Statens Naturvårdsverk, Solna Svenska Jägareförbundet Svenska Naturskyddsforeningen
Switzerland	Comité Central du Club Alpin Suisse Nos Oiseaux Schweizerische Naturforschende Gesellschaft Schweizerische Stiftung für Alpine Forschungen Schweizerischer Bund für Naturschutz Union internationale des Associations d'Alpinisme

Tanzania	Natural Resources and Utilization Division Tanzania National Parks
Thailand	* Association for the Conservation of Wildlife
Trinidad and Tobago	Forestry Department of the Ministry of Agriculture, Lands and Fisheries
Tunisia	* Association Tunisienne pour la Protection de la Nature et de l'Environnement
Turkey	Orman Bakanlıđı, Ministère des Forêts Türkiye Tabiatını Koruma Cemiyeti, Société Turque pour la Protection de la Nature
Uganda	Game Department Uganda National Parks
U.S.S.R.	Ministère de l'Agriculture de l'U.R.S.S. Société de la Protection de la Nature de la République de Russie
United Kingdom	British Museum (Natural History) British Ornithologists' Union Conservation Society Council for Nature Field Studies Council Pheasant Trust Royal Society for the Protection of Birds Society for the Promotion of Nature Reserves Wildfowl Trust Zoological Society of London
United States	African Wildlife Leadership Foundation American Association of Zoological Parks and Aquariums American Committee for International Wild Life Protection American Geographical Society American Museum of Natural History American Nature Study Society American Ornithologists' Union American Society of Mammalogists * Arizona-Sonora Desert Museum Atlanta Zoological Park Boone and Crockett Club California Academy of Sciences Caribbean Conservation Association Caribbean Conservation Corporation Caribbean Research Institute of the College of the Virgin Islands Carnegie Museum Cheyenne Mountain Zoological Park Chicago Zoological Society Committee for the Preservation of the Tule Elk Conservation Associates Conservation Foundation Defenders of Wildlife * Denver Zoological Foundation, Inc. Foresta Institute for Ocean and Mountain Studies Garden Club of America Institute of Natural Resources, Athens, Ga. La Verna Foundation * Michigan State University, Library * Minnesota State Zoological Garden * Mountaineers National Audubon Society National Parks and Conservation Association National Research Council * National Society for Medical Research National Wildlife Federation

National Zoological Park, Smithsonian Institution
 Natural Area Council, Inc.
 Natural Resources Council of America
 Nature Conservancy
 New York Zoological Society
 * North American Wildlife Foundation
 * Portland Zoological Gardens
 * The Research Ranch, Inc.
 Save-the-Redwoods League
 School of Natural Resources, Univ. of Michigan
 Sierra Club
 Smithsonian Institution
 Soil Conservation Society of America
 Southern Illinois University
 * Topeka Zoological Park
 United States Department of the Interior
 * University of Wisconsin-Green Bay
 Wilderness Society
 Wildlife Management Institute
 Wildlife Society
 Zoological Society of San Diego

Venezuela

Instituto para la Conservacion del Lago de Valencia

Yugoslavia

Association de la Conservation de la Nature de Yougoslavie

Zambia

Copperbelt Museum Association
 Wild Life Conservation Society of Zambia

**International
Members**

Commission Internationale pour la Protection des Régions Alpines
 Commission des Réserves Naturelles du Groupement Européen des
 Ardennes et de l'Eifel
 Fauna Preservation Society
 International Biological Programme
 International Council for Bird Preservation
 International Federation of Landscape Architects
 International Union of Directors of Zoological Gardens
 International Youth Federation for Environmental Studies and
 Conservation
 Pacific Science Association

APPENDIX B

The Executive Board

July 1970 - September 1972

<i>President:</i>	Mr. Harold J. Coolidge, U.S.A.
<i>Vice-President:</i>	Prof. I. McT. Cowan, Canada Sir Frank Fraser Darling, U.K. Mr. Zafar Futehally, India Dr. Christian Jouanin, France
<i>Members:</i>	Prof. Dr. M. F. Mörzer Bruyns, Netherlands Mr. B. N. Bogdanov, U.S.S.R. Ing. Agr. I. N. Costantino, Argentina Mr. B. Dioum, Senegal Prof. U. Hafsten, Norway Prof. Dr. V. A. Kovda, U.S.S.R. Doc. Dr. A. Medwecka Kornas, Poland Dr. Paulo Nogueira-Neto, Brazil Dr. M. E. D. Poore, U.K. Mr. Olivier Reverdin, Switzerland* Dr. Lee M. Talbot, U.S.A. Mr. Russell E. Train, U.S.A. Dr. J. A. Valverde Gomez, Spain

* Elected to replace Prof. R. Matthey, Switzerland, who resigned in July.

The Commission on Ecology

<i>Chairman:</i>	Prof. J. B. Cragg, Canada
<i>Vice-Chairman:</i>	Prof. Dr. D. J. Kuenen, Netherlands Prof. J. D. Ovington, Australia
<i>Members:</i>	Dr. J. Berry, Scotland Prof. F. Bourliere, France Dr. H. K. Buechner, U.S.A. Prof. A. de Vos, F.A.O. Prof. W. A. Fuller, Canada Prof. J. L. George, U.S.A. Mr. J. S. Gottschalk, U.S.A. Prof. O. Hedberg, Sweden Prof. G. Hempel, Fed. Rep. of Germany Dr. L. Hoffmann, Switzerland/France Prof. H. Löffler, Austria Prof. H. E. Luther, Finland Prof. Kh. P. Mirimanian, U.S.S.R. Prof. R. Misra, India Prof. M. Numata, Japan Prof. G. A. Petrides, U.S.A. Prof. N. Polunin, U.K./Switzerland Mr. T. Riney, F.A.O. Prof. H. Sioli, Fed. Rep. of Germany Prof. F. E. Wielgolaski, Norway

The Survival Service Commission

<i>Chairman:</i>	Mr. P. M. Scott, U.K.
<i>Vice-Chairman:</i>	Mr. Kai Curry-Lindahl, Sweden Prof. J. Dorst, France

Members:

Mr. H. Abdulali, India
Mr. J. B. Alvarez, Jr., Philippines
Cand. maj. S. Andersen, Denmark
Col. Hla Aung, Burma
Dr. F. D. de Avila-Pires, Brazil
Prof. A. G. Bannikov, U.S.S.R. (Wild Horse*)
Miss P. Barclay-Smith, C.B.E., U.K.
Mr. H. Basjarudin, Indonesia
Mr. J. Boswall, U.K.
Col. C. L. Boyle, U.K.
Mr. J. H. Calaby, Australia (Marsupial*)
Prof. A. Carr, U.S.A. (Marine Turtle*)
Mr. W. G. Conway, U.S.A.
Dr. H. B. Cott, U.K. (Crocodile*)
Prof. I. McT. Cowan, Canada
Col. M. H. Cowie, Kenya
Earl of Cranbrook, U.K.
Dr. J. A. Crespo, Argentina
Mr. P. K. Crowe, U.S.A.
Mrs. N. Duplaix-Hall, U.K.
Mr. H. M. van Deusen, U.S.A.
Mr. R. S. R. Fitter, U.K.
Mrs. M. S. Fitter, U.K.
Mr. H. A. Goodwin, U.S.A.
Major I. R. Grimwood, U.K.
Prof. Dr. Dr. B. Grzimek, Fed. Rep. of Germany
Mrs. B. Harrison, U.S.A.
Prof. T. Harrison, U.K. (Orang-utan*)
Prof. V. G. Heptner, U.S.S.R.
Prof. Dr. W. Herre, Fed. Rep. of Germany (Vicuña*)
Mr. R. E. Honegger, Switzerland
Mr. P. F. Hunt, U.K. (Orchid*)
Dr. J. A. Ibarra, Guatemala
Mr. K. W. Kenyon, U.S.A. (Seal*)
Major B. G. Kinloch, Malawi
Prof. Dr. D. J. Kuenen, Netherlands
Dr. F. Kurt, Switzerland
Dr. Anne LaBastille, U.S.A.
Dr. E. M. Lang, Switzerland
Prof. P. Leyhausen, Fed. Rep. of Germany
Mr. Charles A. Lindbergh, U.S.A.
Mr. J. Lucas, U.K.
Ir. C. H. J. Maliepaard, Netherlands
Dr. R. Melville, U.K.
Dr. Eustorgio Mendez, Panama
Prof. R. G. Miller, U.S.A.
Dr. R. R. Miller, U.S.A. (Freshwater Fish*)
Prof. M. Nishiwaki, Japan (Whales*)
Prof. R. Paulian, France
Mr. John Perry, U.S.A. (Zoo Group*)
Dr. R. T. Peterson, U.S.A.
Dr. J. J. Petter, France (Madagascar*)
Dr. P. Pfeffer, France
Prof. D. H. Pimlott, Canada (Wolf*)
Dr. S. S. du Plessis, South Africa
Sheik Qassim Bin Hamad Al Thani, Qatar (Arabian Oryx*)
Mr. M. K. Ranjitsinh, India (Himalayan Group*)
Mr. C. G. C. Rawlins, U.K.
Prof. H. Roth, F.A.O. (Rhinoceros*)
Dr. G. B. Schaller, U.S.A.
Mr. N. M. Simon, U.K.
Prof. D. Starck, Fed. Rep. of Germany (Primate*)
Mr. P. D. Stracey, Ethiopia
Dr. J. Tener, Canada

Mr. W. K. Van den bergh, Belgium
Mr. Ch. Vander Elst, Belgium
Col. J. Vincent, South Africa
Prof. Warren Wagner, U.S.A.
Dr. L. H. Walkinshaw, U.S.A.
Dr. R. E. Warner, Canada
Dr. J. H. Westermann, Netherlands
Mr. G. K. Whitehead, U.K. (Deer*)
Prof. Pyong-Oh Won, Korea
Dr. J. Żabinski, Poland (European Bison*)

* *Specialist Group chaired by the Member*

The Commission on Environmental Policy, Law and Administration

Chairman of the Commission: Professor Lynton K. Caldwell

Vice-Chairman of the Commission: Mr. W. E. Burhenne

POLICY AND ADMINISTRATION

Professor Lynton K. Caldwell, U.S.A.
Mr. Christian de Laet, Canada
Professor Richard N. Gardner, U.S.A.
Professor Jaro Mayda, U.S.A.
Professor Kauko Sipilinen, Finland

LAW

Chairman of Committee on Environmental Law: Mr. W. E. Burhenne

Vice-Chairman of Committee on Environmental Law: Mr. H. Angelo

Mr. Homer Angelo, U.S.A.
Mr. Malcolm Baldwin, U.S.A.
Professor Waclaw Brzezinski, Poland
Mr. W. E. Burhenne, Fed. Rep. Germany
Mr. V. A. Chichvarin, U.S.S.R.
Mr. Cyrille de Klemm, France
Mr. Michel Despax, France
Mr. Baba Dioum, Senegal
Mr. J. E. S. Fawcett, U.K.
Professor Osamu Ikenouye, Japan
Mr. Geoffrey Alexander Kennedy, Australia
Dr. O. S. Kolbasov, U.S.S.R.
Mr. K. Lassen, Norway
Mr. V. Nielsen, Denmark
Mr. S. Ruhweza, Uganda
Mr. José Sanchis-Munoz, Argentina
Dr. Nagendra Singh, India
Professor P. S. Stainov, Bulgaria
Mr. H. J. Timman, Netherlands
Mr. A. Trollip, South Africa
Mr. Charles Vander Elst, Belgium
Mrs. A. N. Wilson, U.S.A.
Mr. F. B. Zenny, Italy

The Commission on Education

Chairman: Dr. L. K. Shaposhnikov, U.S.S.R.

Vice-Chairman: Dr. Thomas Pritchard, U.K.

Members: Mr. James L. Aldrich, U.S.A.

Drs. J.-P. Doets, Netherlands

Dr. S. Doraiswami, India
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 Dr. Wolfgang Erz, Fed. Rep. of Germany
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APPENDIX C

Quarterly Bulletin

- Volume 2, No. 18* January-March 1971, plus two supplements:
Resolutions adopted by the Second World Wildlife Fund Congress, London, November 1970
Resolutions adopted by the International Conference on the Rational Utilization and Conservation of Nature, Tananarive, Madagascar, October 1970
- No. 19* April-June 1971, plus supplement:
Final Act of the Ramsar Conference: International Conference on the Conservation of Wetlands and Waterfowl, Ramsar, Iran, January 30 - February 3, 1971
- No. 20* July-September 1971 (without supplement)
- No. 21* October-December 1971, plus supplement:
Resolutions of the Regional Symposium on Conservation - Reefs and Lagoons, Noumea, New Caledonia, August 1971

IUCN Publications, New Series

- No. 19* Papers and Proceedings of the Eleventh Technical Meeting, Volume III - International Commission on National Parks Sessions
- No. 20* Papers and Proceedings of the Eleventh Technical Meeting, Volume IV - Commission on Education Sessions
- No. 21* Papers and Proceedings of the Eleventh Technical Meeting, Volume V - Landscape Planning Commission Sessions
- No. 22* Wildlife Conservation in West Africa

Supplementary Paper Series

- No. 31* Proceedings of the Second Working Meeting of Marine Turtle Specialists, Morges, March 1971
- No. 32* Proceedings of the First Working Meeting of Crocodile Specialists, Bronx Zoo, New York, March 1971. (Crocodiles, Volume I)
- No. 33* The status of crocodiles in Africa. (Crocodiles, Volume II)

IUCN Occasional Paper

- No. 1* Proposals for Nature Conservation in Northern Greece, by L. Hoffmann, W. Bauer and G. Müller
- No. 2* Project Aqua - a source book of inland waters proposed for conservation compiled by H. Luther and J. Rzoska
Also published as IBP Handbook No. 21

IUCN Monograph

- No. 1* The Leatherback or Leathery Turtle, *Dermochelys coriacea*, by Peter C. H. Pritchard

APPENDIX D

Statement of income and expenditure for the year ended 31 December 1971

(expressed in Swiss Francs)

	Sfrs.	Sfrs.
INCOME		
Membership fees and subscriptions		404,595
Sale of publications		61,398
Interest on Deposits and Dividends		19,272
WWF Subvention and Earmarked Grants		548,068
Ford Foundation Grant		1,235,500
Unesco Subvention		40,809
Unesco Contracts and Service Agreements		23,935
Miscellaneous Grants and Receipts		321,490
		<u>2,655,067</u>
ADD: Reserves brought to account in 1971		118,202
		<u>2,773,269</u>
LESS: Receipts transferred to Reserves in 1971		162,373
TOTAL INCOME		<u>2,610,896</u>
EXPENDITURE		
Personnel (incl. insurance and provident fund)		
Senior Scientific Staff	461,994	
Other Scientific Staff	755,333	
Auxiliary Staff	199,401	
Supporting Staff	290,540	
Temporary Staff	<u>63,632</u>	1,770,900
Accommodation		94,442
Office and other administrative expenses		156,622
Travel		134,279
Library and Legal Texts		18,718
Publications		107,065
Meetings		103,285
IYF Projects		18,492
Purchase of furniture and equipment		22,155
Service Agreements and Special Grants-Projects		85,540
IBM Computer Programme — Legislation		91,265
Devaluation and difference in exchange		5,478
TOTAL EXPENDITURE		<u>2,608,241</u>
Excess of income over expenditure to 31 December 1970		14,650
Excess of income over expenditure for the year		<u>2,655</u>
Excess of income over expenditure to 31 December 1971 represented by the Assets less Liabilities on the statement attached		<u>17,305</u>

Statement of assets and liabilities at 31 December 1971

(expressed in Swiss Francs)

	Sfrs.
ASSETS	
Cash on hand and with bankers	211,553
Cash in transit	11,384
Prudential Building Association Certificate of Deposit - \$ 7,000	26,880
Prepaid Expenses	159,204
Debtors	9,761
Furniture and Installations	1
TOTAL ASSETS	<u>418,783</u>
LIABILITIES	
Earmarked contributions not yet expended	305,095
Creditors	96,383
TOTAL LIABILITIES	<u>401,478</u>
Excess of Assets over Liabilities	<u>17,305</u>

SCHEDULE I

Earmarked Reserves at 31 December 1971

(expressed in Swiss Francs)

	Sfrs.
Life Associate Fund	65,723
John C. Phillips Award	30,542
Publications	10,764
Red Data Book	95,712
Aqua List	2,640
Purchase of Microfiche Equipment	14,571
Zoo Liaison Committee	6,572
Bunhal Marsh Investigation	306
Kouprey Project	33,468
Primate Co-ordination and Animal Trade Project	30,410
Cheetah and Leopard Survey Project	11,912
Jaguar and Ocelot Survey Project	2,475
	<hr/>
	305,095

Vu et approuvé – Bureau fiduciaire Fernand Guex, May 1972.