

1972 IUCN YEARBOOK

1972

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Annual Report of the International Union
for Conservation of Nature and Natural
Resources for 1972

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INTRODUCTION

The International Union for Conservation of Nature and Natural Resources (IUCN) is an international organization, having as members sovereign States, 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 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 sustainable 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.

IUCN is increasingly acting as the world "conscience" in conservation and in many other issues. Its function in speaking on broad conservation issues, acting as a catalyst to generate action, and giving impartial scientific advice to other conservation organizations and in particular to its sister organization, the World Wildlife Fund, is considered vital in safeguarding and enhancing environmental quality.

At the end of 1972 more than 80 nations were represented in the membership of IUCN. Members included 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, UNEP, UNIDO, WHO and WMO. It co-operates with the Council of Europe, the Organization of African Unity, the Organization of American States, and other intergovernmental 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 in Zaïre in 1975. 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. More details of the work of the Commissions will be incorporated in project reports and summaries in the following pages of this Yearbook. Membership lists are in the Appendix.

IUCN AND THE WORLD WILDLIFE FUND

IUCN has 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 also has its headquarters in Morges.

Although WWF may conduct its own field operations, it tries as much as possible to work through competent specialists or local organizations. But because of their close activities, IUCN and WWF jointly operate the various projects with which they are concerned in order to make the most effective use of available facilities, funds and manpower. Project operations are 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. No attempt has been made in this Year-book 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

1972 was a year of new hope in conservation. The long-awaited United Nations Conference on the Human Environment was convened in Stockholm in June. Representatives of over 100 governments joined together to determine what should be the role of the United Nations in determining the future of the environment of mankind. Not surprisingly, there was disagreement. The USSR and most eastern European countries stayed away. China, a newcomer to the UN, was present but hardly in step with the rest of the world. Not surprisingly also, for the preparation had been thorough, the Conference produced results in the form of more than 100 specific recommendations, and committed itself to a formal declaration on the human environment.

At year's end the UN General Assembly essentially endorsed the results of Stockholm and brought into existence a new organization, the United Nations Environment Programme, with a secretariat under the leadership of Maurice F. Strong, to be based in Nairobi. This programme was to be supported by an environment fund, which, hopefully, would amount to at least 100 million dollars for a five-year period. Not intended to be a super-agency, nor another coordinating body, the new UNEP was rather to give leadership and direction to the UN's environmental actions, and to see to it that the recommendations of Stockholm were translated into action.

The year was a good one for international treaties on the environment. At UNESCO's General Conference in November, the Convention concerning the Protection of the World Cultural and Natural Heritage, over which IUCN had laboured, was formally adopted and would go into effect when ratified by 20 nations. In the same month, in London, a convention to control the dumping of waste at sea was initialled by 57 nations, including the worst offenders. Furthermore, by the end of the year a Plenipotentiary Conference had been scheduled in Washington to con-

clude the "Convention on International Trade in Endangered Species of Wild Fauna and Flora". This marked the end of a long road for IUCN, starting in Nairobi in 1963 where the preparation of a convention draft was first begun.

At UNESCO the machinery to establish an effective programme of research on Man and the Biosphere came into existence with the formation of national committees and the meetings of many panels of experts to define the actions to be carried out under the 13 major projects of the MAB programme.

It was fitting that 100 years after the establishment of the world's first national park at Yellowstone, representatives of 82 nations should gather in Yellowstone and Grand Teton to honour the Centennial and conduct the Second World Conference on National Parks. The Conference proved both critical of past mistakes and constructive in producing new approaches toward conservation of the world's wide heritage. 1972 proved to be a good year for the creation of new national parks - notably in Zambia, Canada, Iran and Germany. But elsewhere, in Uganda, Rwanda, Indonesia, Brazil and northern Africa, the future of existing reserves seemed less secure.

Conservation action in 1972, however, took place against the usual background of war and tension among nations. The appalling destruction of people and environments continued in Indochina and although at year's end the American involvement appeared to be drawing to a close, the prospects seemed remote for restoration of any reasonable level of quality of life for the unhappy people who were victims of the conflict. Elsewhere more improvement was evident. The long and deadly fighting in the Sudan ended and there was hope that people and wildlife would find a new security. The entrance of China into the United Nations led to hope that the status of endangered species, the remarkable wild animal life and natural vegetation of that major area of the Asian continent, would again be revealed to those outside.

The race between population growth and food production continued in 1972, but nature intervened to show how insecure were the gains produced by the "green revolution". Drought of unusual severity hit the wheat-producing areas of the USSR, China and India and seriously damaged the fragile pastoral economies around the edge of the Sahara. Continuance of drought conditions into 1973 would bring a crisis of major proportions to those people of the world who already have less to eat than they require. To add to the problems of producing food, a threatened shortage of fuel resources began to dominate in headlines at the year's end. The principal energy-consuming nation, the United States, faced shutdowns in industry,

space heating and transportation owing to fuel shortages during the unusually cold winter season. While it could be argued that the immediate shortage in the United States was the result of ineptitude on the part of energy producers and distributors of fuel, the long-run prospects for energy sources must be considered as threatening. The ways out that have been indicated vary with the social orientation of their advocates. Conservationists, for the most part, point to the need to reduce consumption, eliminate waste, and develop non-polluting sources. Others advocate a great increase in environmentally risky power plants fired by nuclear fission.

Meanwhile the world population moved in 1972 toward the four billion mark with no noticeable slackening of growth in most parts of the world. Declining birth rates in the USA and western Europe, however, suggested that where the need for birth control was appreciated, and the means made available, public response will be favourable.

It was easy in 1972, at levels of international organization, to believe that great progress had been made toward environmental improvement. But at ground level the progress was not apparent. In the tropical forests of Amazonia and in south-east Asia the chain saws and bulldozers of timber exploiters continued their unremitting onslaught against the last great tropical wilderness regions, without concern for the future of people or wildlife. Deserts continued to spread in Asia and Africa. All of the talk and some action about air and water pollution control produced only marginal results in a few areas. In most places the rivers grew uglier and the air more foul. The Rhine and the Danube, the Hudson and the Tiber continue to pour their filth into the sea, and in Italy the delta of the Arno was pronounced to be lifeless. The condition of the oceans worsens. The shores of the Mediterranean seem less and less like a good place to spend a summer.

To many who have an interest in wildlife, 1972 was the year of the whale, which came to be a popular symbol for all endangered species. At Stockholm, there was a near unanimity among the delegates in calling for a 10-year moratorium on commercial whaling. Later in June, however, when the International Whaling Commission met in London, there was less enthusiasm and the call for a moratorium was rejected. Nevertheless the IWC took the strongest action for whale conservation in its history, discontinuing at long last the "blue whale unit" system, setting reduced quotas for those species believed to be below levels which would produce maximum sustainable yields and approving immediate implementation of the international observer scheme. Many conservationists, however, were not satisfied by the results and continued action to put an end, once and

for all, to commercial whaling. The Marine Mammals Conservation Act, which became law in the United States in 1972, was a movement in this direction, whereas the new environment-minded Government elected in Australia took early action to eliminate the import of whale products.

Kangaroos came in for more than their share of rhetoric in 1972 also. Although none are endangered, the continued, and in some States uncontrolled, slaughter of these animals caused widespread public revulsion. As a means of forcing its States to take effective steps toward regulation and control of the kangaroo industry, the Australian Government placed an export ban on kangaroo products.

But the list of endangered species grows, and at year's end when IUCN had completed its revision of the Red Data Book for mammals, 132 taxa were found to be threatened with extinction and another 60 were either approaching that situation or had only recently escaped from it. Direct reduction by man appeared as a major cause of endangerment, with loss of habitat through human action in second place. The two interact. Degradation of habitat increases the risk of the species to decimation from hunting or trapping. The situation with other groups of animals and plants was no better than with mammals. With reptiles, amphibians, fish, invertebrates and most groups of plants, it is virtually impossible to compile a complete list of endangered taxa. For many groups systematics and taxonomy are poorly known and a minimum of information is available on distribution and abundance. For most of the life of the world, therefore, conservation must be based on the protection or careful use of the biotic communities and ecosystems to which species belong and not on efforts directed toward the safeguarding of individual species.

Despite all losses on the ground it was difficult not to feel new hope at the end of 1972. The ponderous machinery of governments and inter-governmental agencies had begun to turn over and move in the right direction. Many people in many lands had begun to question the meaning of "progress" where such progress was in the direction of a lowered quality of life. The willingness to act to protect environments has been demonstrated. 1973 may show how effective such action can be.

REVIEW OF UNION ACTIVITIES

For IUCN 1972 was a time of fulfillment, a time when years of effort put against a number of major projects came to successful conclusion.

The year brought the 11th General Assembly and the associated 12th Technical Meeting at Banff, both major triennial activities at which the conservation course for the Union is set.

The year also brought the Second World Conference on National Parks, an event which the Union had anticipated and worked toward for 10 years.

Another project of long IUCN involvement bore fruit in November when a Convention concerning the Protection of the World Cultural and Natural Heritage was adopted by the UNESCO General Conference. IUCN is particularly concerned with natural heritage aspects and is included as a non-voting member of the Intergovernmental World Heritage Committee which is to take policy decisions under the Convention.

In the 12 months past, close working arrangements between IUCN and its sister organization, the World Wildlife Fund, were strengthened. The two secretariats at Morges work as a team and projects of both groups are under joint management.

Working relationships with the UN system also were carried forward. IUCN enjoys formal consultative status with the UN in New York and Geneva, with FAO, UNESCO, UNIDO, WHO and WMO, and has effective working relationships with the other principal relevant inter-governmental agencies.

IUCN collaborated with the Secretariat of the UN Conference on the Human Environment in the preparation of papers and as consultants on various aspects of the Stockholm Conference in June. It also continued to have an important role in UNESCO's Man and the Biosphere Programme, which had been launched late in 1971.

Both of these programmes will have deep and long-lasting impact on conservation. In the area of public awareness, impetus toward putting to

rights our abused natural world and preventing its further degradations, the UN Environment Programme under Maurice F. Strong, which emerged as the institutional result of the Stockholm Conference, can be regarded as the major conservation action of the year. In the area of scientific advancement in understanding the biosphere, the MAB Programme can be regarded as an historic advancement in which IUCN is pleased to have a continuing role.

As always, the management of the world's renewable resources was a major concern of the Union. Emphasis was given to environmental problems resulting from the impact of man on his environment, and to projects that will help ensure that development programmes are planned in accordance with ecological principles.

Late in 1972, work was finished on the manuscript for an important book entitled "Ecological Principles for Economic Development", prepared in collaboration with the Conservation Foundation (Washington, D.C.) for commercial publication early in 1973 by John Wiley & Sons, Ltd. (UK). It is hoped this publication will have great influence in encouraging planning officials and other decision-makers to take ecological factors into account *before* potentially destructive development projects are launched.

The production of this book and the activation of various IUCN projects leading from it have been helped by a generous grant from the Swedish International Development Authority (SIDA). IUCN has already instituted a number of activities intended to develop further ecological principles and guidelines and to facilitate their application in economic development. Included among them are the preparation of important publications on ecological guidelines for development of islands and tropical coastal areas, conferences on development of the American humid tropics, the Alpine region, and semi-arid regions of south-west Asia. In addition, a joint project being carried out with the University of Newcastle-upon-Tyne in the United Kingdom will explore the place of the ecologist in a development planning team and will assist in the incorporation of ecologists in development planning activities.

Although these are specific activities assisted by funds provided by SIDA, many other activities of IUCN are concerned with the incorporation of ecological principles in the planning of conservation and development programmes. It was the wish of the 11th General Assembly of IUCN that this topic receive major emphasis during the 1973-75 triennium.

A substantial start was made on a 1973 edition of the UN List of National Parks and Equivalent Reserves, which is to be published in connection with a new World Directory of National Parks and Other Protected Areas.

This latter publication will be in loose-leaf form and will contain definitive descriptive data on the areas included. Both publications will utilize the new criteria and classification guidelines approved by the 11th General Assembly at Banff.

Revision of Volume F, *Mammalia*, of the Red Data Book was completed for publication in early 1973. Data on each listing was carefully reviewed. New information was added, as were new sheets for vulnerable species which are thought likely to move into the endangered category in the near future. Five categories are now included: *Endangered*, *Vulnerable*, *Rare*, *Out of Danger* and *Inadequately Known*.

The Union's traditional interest in the conservation of wild places and wildlife, which has given it a central role in worldwide conservation matters, continued strongly, but with greater emphasis on the conservation of biotic communities and protection of the social and long-term economic values these resources represent. Specific conservation programmes are aimed at creation of new national parks or reserves or strengthening the protection and management of existing reserves. Meetings of Survival Service Commission specialist groups on Polar Bears and Seals were held in Morges and Guelph, Canada, respectively. The great whales, the vicuña, the spotted cats, wolves, tigers, crocodiles and marine turtles all received continuing attention, as did the excessive commercial trade and/or habitat infringements which have plunged these and other animals into trouble.

The Red Data Book and IUCN's continuing work in the field of wildlife under threat lay behind much of the growing international effort to increase protection of these species. As the year drew to a close the US Government issued invitations to an international Conference in Washington in February, 1973, to conclude a convention to regulate trade in threatened species of wild fauna and flora. As IUCN members will recall, such a convention has been a foremost Union objective since 1963.

Major efforts by the Commission on Ecology to improve the cataloging of wetlands were launched while projects involving the study of ecosystem problems of the arctic, high mountains, deserts and semi-deserts, islands and rain forests were advanced.

During the year the programme of environmental education moved ahead, particularly in the development of curricula at all levels and teacher training. In this connection an International Workshop for Higher Education and Teacher Training was held under IUCN sponsorship at Althouse College of Education in London, Ontario. The Workshop was another in a series of professional meetings which, taken together, have greatly advanced worldwide attention to the requirements of and for environmental conservation education.

Work is well advanced on the preparation of a methods handbook on environmental conservation teaching in primary and secondary schools. Professor R. N. Saveland of the University of Georgia, USA, heads the task force on this project. Publication in 1973 is planned.

Late in the year a continuing project of the Commission on Education took a long step forward when a tentative edition in English, French and Russian of a multilingual dictionary of environmental conservation terms was completed and distributed for comment. The Central Laboratory for Nature Conservation of the USSR Ministry of Agriculture is collaborating in this work, which eventually will be published in German and Spanish as well.

The Commission on Environmental Planning continued to monitor the management of land resources and 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 in areas related to government and conservation. Considerable progress has been made in developing active projects, including the Green Book on threatened landscapes, and planning for a major meeting on the Future of the Alps, to be held in 1974.

In Bonn, the IUCN Environmental Law Centre carried forward its work under the auspices of the Commission on Environmental Policy, Law and Administration. Continuing functions include: (1) the collection, classification and indexing of environmental law from all countries, (2) analyses of trends in environmental law, (3) development of international conventions on conservation, and assistance to requesting governments on national legislation. These are linked with the Commission's interest in exploration of government policy statements and administrative machinery and practice concerned with environmental issues.

A computerized information retrieval system developed at the Centre was demonstrated at the UN Conference in Stockholm and at the International Parliamentary Conference on the Environment in Vienna.

The Secretariat remained in Morges. Planning for the new Geneva joint headquarters with the World Wildlife Fund was advanced. Construction, however, will be delayed by Swiss building restrictions. The Geneva headquarters will be located on a site near the Botanical Garden and the Palais des Nations, the UN European Headquarters. This 3 ha site has already been acquired.

Details of the projects and activities mentioned in the preceding paragraphs will be found in the following sections of this Yearbook.

BROAD ISSUES

11th General Assembly

IUCN's 11th General Assembly was held in September in Banff, Ontario, at the invitation of the Government of Canada.

This triennial meeting, at which Union policy is set and other principal business conducted, was well and widely attended: a total of 360 people came to Banff from 54 nations and 19 international organizations.

The agenda covered two full days of General Assembly sessions, and three and one half days for the 12th Technical Meeting. Principal General Assembly business dealt with elections, consideration of amendments to the Statutes, approval of the programme and budget for the next triennium, ratification of new member organizations and consideration of a proposal for increased membership fees.

The Union elected as its new President, Professor D. J. Kuenen of the Netherlands. It named five vice-presidents, including two who carry over from 1969, and elected nine new members to the Executive Board. The full list of those elected is printed in Appendix B. Appendix C lists the Executive Board which served until General Assembly.

The General Assembly unanimously approved a number of amendments to the Statutes for the following purposes:

1. To provide for rescission of memberships, to introduce a new class of "Affiliate Member", and to clarify certain other matters relating to membership.
2. To limit the number of votes that national organizational members from any one country can exercise to a maximum of 10 percent of the voting rights in the non-governmental category.
3. To enlarge the membership of the Executive Board and to provide for a greater geographical spread of representation, to rationalize the provisions for staggering the terms of office of members of the Executive Board, and to provide for the possibility of extending the term of office of a member of the Executive Board who is to be re-elected as Vice-President.
4. To provide for the constitution of the Executive Committee.
5. To provide for the election by the General Assembly of Vice-Chairmen of Commissions.
6. To change the designation of the chief executive officer of the Union from "Secretary-General" to "Director-General".

IUCN's work programme for the coming three years was discussed and approved, along with the budget for the same period. The General Assembly also endorsed the Executive Committee suggestion that membership fees be raised, approving a broad increase of about 50 percent. The full text of Resolution No. 387 on membership fees is printed in Appendix H.

One task of the General Assembly is ratification of new members. At Banff, 28 governmental organizations, 40 non-governmental organizations, and 7 international non-governmental organizations were endorsed as members. The full list of members is printed in Appendix A.

Resolutions of the General Assembly, major expressions of IUCN conservation viewpoints and recommendations for action, were published in the Proceedings (Supplementary Paper No. 40 E, 1972), and as a Supplement to the IUCN Bulletin, October 1972.

In addition to the Assembly and Technical meetings at Banff, a number of open informal groups were organized to discuss subjects as diverse as the utilization of marine resources, scientific tourism, animal trade, wolves, and the conservation of tropical rain forests. Finally, an open forum was held to consider matters pertinent to the Union but not part of the normal General Assembly business.

Special mention is made of the warm hospitality of the Government of Canada, which provided excellent arrangements at Banff for the meetings and for the comfort and convenience of delegates. Principal facilities were at the Banff Center, where the entire theatre complex was made available to the Union. Delegates were delighted by two special social events, an outdoor beef barbecue given by the Canadian Government at the Indian Grounds near the village of Banff, and a wine and cheese party given by the Government of Alberta at the Banff Springs Hotel.

The General Assembly ended with a cordial invitation from the representatives of the Government of Zaïre to hold the 12th General Assembly in that country in 1975. This was accepted with enthusiasm.

12th Technical Meeting

By custom, Technical Meetings are held in conjunction with General Assemblies. The 12th Technical Meeting was spread over three and one half days beginning 12 September.

The theme "Conservation for Development" was chosen for this meeting because an interdisciplinary approach and broadened scope are required in the worldwide dialogue between environmentally-concerned experts and those who make decisions affecting the environment. This

involved no surrender of any of the basic philosophies which constitute conservation's *raison d'être*, but rather recognition that conservation, as an action-oriented discipline based on scientific knowledge, must adapt to changing circumstances.

However much the activities often associated with the word "development" may be deplored, the inescapable fact is that the world increasingly will be subjected to changes: inevitably more and more natural areas will be lost as men struggle to meet their needs for space, food, housing and manufactured goods. No great foresight is required to see that unless conservation - and by this we mean, broadly, the rational use of natural resources leading to improved quality of life - is made an integral part of all planning for the future, the chances are that there will be little left to conserve.

IUCN approached this problem in its 12th Technical Meeting with seven half-day sessions on the following topics:

1. Environmental Quality in a Changing World
2. National and International Environmental Policies
3. Ecological, Multidisciplinary Approach to Development
4. Resource Utilization and Conservation
5. Management of Non-Agricultural Rural Lands
6. Dynamics of Vanishing Species and their Habitats
7. Conservation of Marine Habitats.

IUCN will continue to direct its full attention - in detail and in broad direction - toward achieving this goal within the areas of its competence as its mandate from the General Assembly.

Papers and proceedings of the Technical Meeting will be published in the New Series as number 28.

UN Conference on the Human Environment

The United Nations Conference on the Human Environment was called by the UN General Assembly in response to the initiative of the Swedish Government as a major response by the United Nations to growing worldwide environmental deterioration. The Conference took place in Stockholm from 5 to 16 June 1972, with 114 governments participating. IUCN, which had taken part in the preparatory effort, was one of the non-governmental organizations attending with observer status. Director-General Gerardo Budowski was invited to address the Conference and his remarks on the subject of conservation and development were received with enthusiasm.

There was general recognition that conservation of nature and natural resources must be an integral part of sound development and environmental programmes and that this is not a luxury but an absolute necessity. This point was basic to many of the recommendations in the action plan. Nevertheless, the theme of wilderness and the need to maintain and enhance diversity was given little attention.

The scope of the Conference was wide and not restricted to pollution, as had been anticipated by some. The tightly condensed documentation resulting from two years of preparatory meetings and wide consultations covered six main areas: planning and management of human settlements for environmental quality; environmental aspects of natural resources management; identification and control of pollutants of broad international significance; educational, informational, social and cultural aspects of environmental issues; development and environment; and international organizational implication of the action proposals.

A principal achievement has been to involve all governments in environmental issues. The preparatory work for Stockholm hastened the creation of national machinery for dealing with environmental matters and made it necessary for governments to be concerned with international action in this field. There is still an understandable tendency to see these issues only in local short-term perspective. National sovereignty was jealously protected throughout the meeting. When it came to voting, the short-term interests of countries clearly prevailed over long-term benefits for planet Earth. A notable gap was the absence of delegations from Bulgaria, Czechoslovakia, Hungary, Poland and the USSR.

In terms of its expressed objectives the Conference was undoubtedly a success. A Declaration on the Human Environment giving broad guidelines to governments was adopted. UN machinery for handling environmental issues was worked out, including proposals for a new organization reporting to the UN General Assembly through ECOSOC, handling an Environmental Fund of \$100 million in the first five years. A world Action Plan for the environment was also approved.

As a follow-up to the Stockholm Conference, the UN General Assembly gave final form to the new UN machinery as the UN Environment Programme. Mr. Maurice Strong, who had been Secretary-General of the Conference in Stockholm, was elected Executive Director, with his term to begin 1 January 1973.

Headquarters of the new agency will be in Nairobi, Kenya.

Policy issues raised at Stockholm

As a means of examining several issues on environmental policy raised during the debates at the UN Conference on the Human Environment (Stockholm, June 1972), a special task force was formed under the auspices of the Commission on Environmental Policy, Law and Administration. The task force identified the related concepts of "additionality" and "compensation" as being items for immediate examination and has commenced work on the preparation of reports on these topics. Several other issues are also being examined.

Environmental Administration

Following discussions with the Public Administration Division of the United Nations (UNPAD) in New York, IUCN through its Commission on Environmental Policy, Law and Administration undertook to prepare a series of papers on organizational, educational, and legal aspects of environmental administration at various levels in different countries. These papers, which take into account pertinent recommendations of the UN Conference on the Human Environment, have been completed and will be published in 1973 by UNPAD.

The Second World Conference on National Parks

One of the conservation highlights of 1972 was the long-awaited Second World Conference on National Parks, held 18 to 27 September at Yellowstone and Grand Teton National Parks, USA.

IUCN was a sponsor of the Conference along with the National Parks Centennial Commission and the US Department of the Interior through the National Park Service. Co-sponsors were FAO, UNESCO, and the Natural Resources Council of America.

In this year of the centennial of the US national parks, the Conference appropriately opened at Yellowstone, the first national park in the USA and in the world. Centering in the complex of facilities at Old Faithful, our US hosts, the National Parks Centennial Commission, with the US Department of the Interior and National Park Service, arranged three days of tours, discussions and ceremonies preliminary to the formal Technical Sessions at Grand Teton National Park.

Opening ceremonies were in the Recreation Hall at Old Faithful. Then followed a series of panel presentations on the theme, "Policy and Program Considerations in the Establishment, Preservation and Use of National Parks in the USA". In late afternoon, some 1,750 people were taken in special buses to nearby Madison Junction for an outdoor barbecue supper, and an evening programme during which the wife of the US President, Mrs. Richard Nixon, re-dedicated Yellowstone with a symbolic re-lighting of the celebrated 1870 campfire around which the national park "idea" was conceived.

On 20 September, panel discussions were continued at Old Faithful. Then on 21 September, the participants who were invited to take part in the Technical Sessions were transported to Jackson Lake Lodge in Grand Teton National Park, some 50 miles south.

Director George B. Hartzog, Jr., of the US National Park Service, and Director-General Gerardo Budowski of IUCN were co-chairmen of the Conference, opening the sessions on the morning of 22 September. Experts from 82 nations and a number of their territories, 8 international organizations, plus federal, state and private US natural resource agencies were registered.

The Technical Sessions were organized to provide a review of the past in the national park movement and to explore the major problems of park formation, planning, operation and management that lie ahead. Background aspects were covered in a series of 32 previously distributed papers which had been prepared and translated under IUCN's guidance during the preceding year. Experts from around the world were authors (see IUCN Bulletin vol. 3 (8), p. 37, August 1972).

The Conference was organized in 17 sessions. After the opening session, when rules of procedure and agreement on the committee and handling of Recommendations were adopted, 15 technical meetings were held.

The Conference ended at noon on 27 September following adoption of 20 Recommendations, which were published as a Supplement to IUCN Bulletin vol. 3 (11), November 1972.

At the final session, a clear consensus emerged that a Third World Conference on National Parks be held sometime between 1975 and 1978. No invitation was issued but the hope was expressed that since the first two world park conferences had been in the United States, the third should be on another continent, and in a non-industrialized country.

Special events at Yellowstone and Grand Teton included the granting of special achievement awards by the National Parks Centennial Commission to 10 distinguished US citizens, 6 eminent elder statesmen in the international community of park leaders, and 5 younger leaders who have

made special contributions to the development of national park programmes in their home countries. The Conference banquet on 23 September was hosted by Reader's Digest, Inc. and Chairman Edmund B. Thornton of the National Parks Centennial Commission. It was attended by 677 participants and guests, and was followed by the premiere showing of the film "Earthbound", produced by William Eddy of the Conservation Foundation for the US National Park Service. A copy of this film was offered to each of the countries represented at the Conference, and each participant also was given a copy of the companion book, "Consider the Process of Living", by Rob Milne.

Other outstanding presentations of current literature to the participants included "Yellowstone, A Century of the Wilderness Idea" by Ann and Myron Sutton, "The National Park Service" by William C. Everhart, Sunset's "National Parks of the West" by the Lane Book & Publishing Company, and "National Parks for the Future", a report prepared by the Conservation Foundation for the Centennial Commission.

Special note is taken of the generosity of the Centennial Commission which provided financial assistance for the travel of a large number of participants, and for their expenses at both Yellowstone and Grand Teton. Without this practical assistance the Conference could not have been successful.

Physical arrangements for the Conference were excellent. Transportation, the handling of baggage, services for participants, special tours, etc., had been carefully planned and were carried out smoothly by teams of US National Park Service personnel under the general supervision of Superintendents Jack Anderson of Yellowstone and Gary Everhardt of Grand Teton.

Principal members of the Secretariat were all from the US National Park Service. Roger Contor was Secretary General. Deputy Secretaries General were Gordon Fredine, who looked after Conference organization and the travel and other affairs of participants, Robert Standish (seconded to IUCN's staff), who supervised preparation of the papers and organization of the technical meetings, and Cecil Lewis, who was in charge of special activities. National Parks Centennial Commission staff was headed by William J. Briggle, with T. Sutton Jett and Mrs. Jean C. Henderer as staff directors.

Highlights of the Technical Session

In recent years increasing attention has been given to the specialized aspects of national park management. This has developed as the body of park

knowledge has expanded and as problems have become more acute.

It was quite natural therefore for the organizing group to divide the Technical Session so as to consider more effectively the major areas of management interest. Authors were experts in the fields they dealt with, but panels usually contained a number of generalists who were concerned with broad applications of knowledge and techniques. This arrangement allowed scope for specialists to explore particular areas in some depth, while avoiding discussions that were so technical as to obscure the elucidation of broad management guidance, which was the purpose of the Conference.

While all sessions proved to be lively, well-attended and of great interest, it is obviously not possible to discuss them all here. They will, of course, be treated in detail in published proceedings. Nor is it necessary to give more than passing mention to the opening sessions which were designed to provide all participants with basic background and a common starting point for the more technical discussions that followed.

The sessions can be grouped in six subject areas: general, scientific habitat, management, planning, interpretation, and cooperative activities.

The session on Parks and People embraced a general discussion of the problems of visitor numbers and what can be done about them. More technical sessions considered the social, scientific and environmental problems of parks in especially vulnerable regions or areas difficult to manage. A number of Conference Recommendations specifically refer to some of the fragile areas discussed in these sessions. Conservation of tropical rain forest ecosystems is an example.

A number of meetings dealt with interpretation of park values, and with the opportunities parks offer for the expansion of human understanding and appreciation of the natural world. One session used an unusual approach to explore basic educational opportunities through a series of outdoor workshops. These permitted individual participation in the techniques of learning.

Several sessions were devoted to opportunities for further international cooperation, in expanding protection of park resources and in identifying sources and types of aid and assistance available through international, national and private organizations.

Any evaluation is, of course, subjective, but the majority of park managers indicated that sessions of exceptional interest included those on Planning and Management, Wildlife and Resources Management, and Staff Development and Training.

The Planning session was particularly constructive, and the following synoptic notes cover the major points.

1. Park planning in perspective of total environment. - There is no doubt that planning must provide the necessary base for all further parks development and management. Planning of national parks has to fit in with overall land use planning and into the adopted planning system of the particular country. It was pointed out that in Europe all state agencies and all private interests are obliged to comply with the approved planning systems and with specific plans. A "plan" for an area, including a national park, means a written statement of objectives and policies including the following six principles. It must be: (a) directly related to the plans for the land around it; (b) as simple as possible; (c) related to environmental, social and economic issues; (d) compatible with the resources, powers and techniques available to implement it; (e) frequently brought up to date; and (f) continuously followed up.

According to Miss Sylvia Crowe, author of one of the papers, the whole land should be planned on conservation lines, so that national parks are not regarded as mere oases of nature reserved for animals and plants, but as areas where man co-exists with other species. This is especially the case in highly developed countries such as England or Germany where no untouched natural areas are left and cultivated areas have to be included in parks. The Luneburg Heath area in northern Germany forms an excellent example for this. This park, designated as a "nature park" or "natural countryside park", is part of an overall land use plan in the triangle of the three big cities of Hamburg, Hannover and Bremen as a recreation area for 3.5 million people per year and providing the preservation of a natural landscape with its ecosystems. This dichotomy in national park objectives, preservation of nature and encouraging recreational use, forms the platform for all planning.

Discussions brought out strong opposition against selection of park areas as tourist attractions or merely for scenic beauty. The primary criteria must be to set aside adequate samples of the most important natural communities; i.e., to preserve representative ecosystems. But within these criteria samples of the most scenic landscapes are included as well.

2. Park planning techniques. - For each established or prospective national park, a master plan and further detailed management plans must be provided. The task of a master plan aims principally at establishing the set of policies which will, (a) outline the main areas in their principle functions within the park objectives; and (b) dictate the degree of development, if any, and management.

The master plan does not normally include the subsequent site planning and management planning, but both are controlled by it. Its first task is

to assemble comprehensive background information which should be carefully analyzed to come to the second task, the determination of specific and detailed park objectives.

It seems very important to include the basic requirement of park interpretation programmes in this planning. As a matter of fact, interpretation starts with letting the public take part in the planning. The needs of people can thus be learned; usually much more is known about the flora and fauna than about people using the parks. The carrying capacity, which has to come into the planning concepts, should play an important role in the people-ecosystems relationships of each park. But it was stated very clearly that preservation of nature must have priority. This priority should be made evident in national and regional planning as well as in all development plans.

3. Implementation of planning. - In the implementation of planning, zoning should become a key tool for decision-making, and development should become a subdivision of management planning. It seems necessary to prepare alternative plans for achieving the stated concepts. In some cases, especially in developing countries where ecological information and other knowledge are scarce, periodic plans will ease the implementation of objectives and allow improvements based on growing information.

As in bringing forward the planning concepts, a variety of disciplines is needed to manage parks. The ideal park manager seems to be an ecologist with strong social science capability. It was stated that the national parks' authority should be an autonomous body, able to establish its own priorities concerning management and funding, to make agreements and negotiate with other official and private agencies - and have all necessary flexibility to carry out implementation programmes.

The suggestion was made that management might be divided into two functions, planning and decisions, and practical field work. Planning and decisions should be in the hands of people with a well-founded scientific knowledge of ecology and a far-reaching background of sociology and education. The practical field work could be directed by foresters, technicians, road builders, etc.

World Heritage Convention

A Convention concerning the Protection of the World Cultural and Natural Heritage was adopted by the UNESCO General Conference in Paris on 16 November. This culminated a series of actions over several years, bringing together in one document steps to protect both the cultural

heritage and the natural heritage, the latter having been IUCN's special concern.

The Convention was immediately opened to ratification by State members of UNESCO and will enter into force after this action has been taken by 20 States.

Both cultural heritage and natural heritage are to be safeguarded under the Convention. Natural heritage is defined as:

- natural features consisting of physical and biological formations, or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view;
- geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding value from the point of view of science or conservation;
- natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

Action for the protection, conservation and presentation of the World Heritage is to be taken at the national level. States pledge cooperation and assistance in protecting the World Heritage.

An intergovernmental committee called the World Heritage Committee, consisting of 15 States (provision is made for later increase in size to 21), is to take policy decisions under the Convention. The Committee will include, as non-voting members, representatives of IUCN (concerned with the natural heritage) and of International Council of Monuments and Sites (ICOMOS) and the International Centre for the Study of the Preservation and Restoration of Cultural Property (both concerned with the cultural heritage). UNESCO, collaborating with these three bodies, will provide the Secretariat for the International Committee.

On the basis of inventories submitted by States, the World Heritage Committee is to prepare and publish a World Heritage List covering items it considers to be of outstanding universal value. It is also to prepare a List of World Heritage in Danger, setting out items which require major conservation action.

Requests for assistance in securing the protection, conservation, presentation or rehabilitation of the World Heritage will be examined and decided on by the Committee. A World Heritage Fund will be established comprising compulsory and voluntary contributions (the compulsory element will not exceed 1 percent of the contribution by the State concerned to the regular budget of UNESCO), other gifts or donations, and funds raised by special appeals. These monies will be used to provide help in protecting the World Heritage.

The proposal for the World Heritage Convention was strongly endorsed by the UN Conference on the Human Environment (Stockholm, June 1972), the IUCN Eleventh General Assembly (Banff, September 1972), and the Second World Conference on National Parks (Grand Teton, September 1972). IUCN hopes that its members will take all appropriate action to ensure early ratification by as many States as possible.

SCIENCE OF CONSERVATION

IUCN's major concern is the applied aspect of conservation, but there is continuing work on the basic scientific and philosophical concepts on which conservation depends. Some of these scientific studies are concerned with the effects of toxic chemicals and other man-made environmental disturbances on wildlife, problems connected with the introduction of exotic species, and the size of populations needed to maintain genetic diversity characteristic of wild populations, along with a worldwide classification of biotic communities combining ecological and biographical criteria. The maintenance and enhancement of diversity and the need to preserve future options, and the need for new goals in national planning, including quality of life, have been steadily emphasized in literature and at all forums available to us.

Man and the Biosphere Programme

Planning activities for UNESCO's MAB Programme, a cooperative, scientific, in depth investigation designed to fill large gaps in man's knowledge and understanding of the biosphere, were carried forward during 1972 by a bureau headed by Professor F. Bourliere of France, assisted by a Panel of Experts and an *ad hoc* Working Group. IUCN was closely involved with both of these groups.

Of the 13 research themes making up the MAB Programme, IUCN is already active in 11. The Union thus is expected to participate actively in this major scientific programme, which will move into its active investigative phase in 1973.

Alerting system on ecological effects of toxic chemicals

The Commission on Ecology is concerned with some of the biological consequences of environmental disturbing factors. Thus a working group

is coordinating projects concerned with the ecological effects of toxic chemicals and a task force provides an alerting system on toxic chemicals that present special hazards. A position statement on persistent organochlorine pesticides was published in the IUCN Bulletin in June.

Monitoring environmental contamination using indicator species

This project was prepared following a decision of an informal meeting on toxic chemicals held in Morges in June 1972. The project makes provision for a continuing review of variations in selected indicator bird species populations throughout the world. The initial work will cover a collation and analysis of results of bird population surveys of a periodic nature, emphasizing changes in numbers of various sea birds, raptorial and colonial freshwater birds as well as changes in species diversity of terrestrial birds in various sample areas.

As planned, the project will be carried out under the auspices of the Commission on Ecology in collaboration with ICBP, IWRB and SCOPE. A small Working Group consisting principally of scientists interested in avian populations, and/or the effects of toxic chemicals on these populations, will be established to undertake various aspects of data collection and methods of analysis.

A system of classifying natural regions - elaboration of biotic provinces

A suitable system of classification of biotic communities is urgently needed in relation to the determination of priorities for the establishment of natural reserves and the development of programmes for conservation of biota. Such a system is important for use in the construction of the IBP/CT Check Sheet Survey and will prove useful in UNESCO's Man and the Biosphere Programme.

IUCN is involved in various activities concerned with monitoring the status of species populations and biotic communities. Special emphasis, therefore, is laid on threatened species and biotic communities, and fragile ecosystems of special interest to science.

In producing such data and organizing it for publication in various forms including the World Directory of National Parks and Other Protected Areas, the Directory of Important Wetlands, etc., a classification system must be used. IUCN has produced an initial draft of a suitable system and this is being further elaborated.

Late in the year action was taken to consult specialists throughout the world to obtain information needed to further develop the system and

to enable compilation of maps showing biotic provinces throughout the world. The IUCN Commission on Ecology is concerning itself with this matter but a wide range of experts must be contacted.

Much of the work should be completed in 1973, with the development of a universally acceptable system of classification.

This project is linked with the general task of selecting representative ecosystems for conservation. IUCN is now maintaining the IBP/CT data bank of ecological information, under a cooperative arrangement with the Nature Conservancy (UK).

The work is also linked with Project 8 of MAB, which is concerned with the definition of ecosystems and natural communities as a basis for establishing a global network of protected areas.

Conservation of certain islands as "Islands for Science"

This project covers the formulation, and action to secure the adoption, of measures to safeguard a number of islands as "islands for science" through the bringing into effect of a suitable treaty, convention or series of agreements and the development of a programme of long-term research on these islands, many of which are uninhabited and of exceptional scientific importance.

A great deal of work has occurred since this project was called for at the Eleventh Pacific Science Congress in 1966. Lists of islands have been prepared and circulated for study and comment, and long-term research programmes are in preparation.

Meanwhile, after discussions at the second meeting of the Preparatory Committee for the UN Conference on the Human Environment (Stockholm 1972), an Intergovernmental Working Group on Conservation (IWG) was established by the UN. At a meeting in New York in September 1971 to *inter alia* consider the proposed draft Convention on Conservation of Certain Islands for Science, the IWG recommended that the Conference Secretariat, in collaboration with IUCN, should redraft the text of the proposed Convention in the light of discussions at the IWG meeting for circulation to all Member States of the United Nations, asking for comments.

This has been completed and revisions undertaken based on the comments received.

At the end of the year it was hoped that some of the governments most concerned would soon take initial steps to convene an intergovernmental meeting to discuss the draft convention.

GOVERNMENT AND CONSERVATION

The growing complexity of environmental matters, and their interrelation with social and economic activities at all levels, on a world-wide basis, has brought progressively deeper IUCN involvement in the mechanisms of government and conservation.

Through the work of the Commission on Environmental Policy, Law and Administration, the Union has sought to advance the legal bases for environmental protection through such means as draft treaties and conventions, development of environmental policies, and continuing collection, study and codification of legal texts on environmental matters.

A variety of projects, some new and some on-going, based on these broad areas of concern, are reviewed in the following pages.

Environmental law documentation

This is a basic and on-going project which covers documentation at the IUCN Environmental Law Centre at Bonn, Federal Republic of Germany. This central collection of legal texts includes legislation, regulations, and international conventions dealing with the protection of the environment and the conservation of natural resources.

Begun in 1963, the collection has gradually been extended until it now embraces most of the aspects of legislation bearing on the environment, and includes material from nearly 100 countries, as well as material from states or provinces in federal countries. Many thousands of texts are in the collection.

Operation of the Centre involves searching, scanning and indexing new accessions, filing the selected texts, handling inquiries for information, including photo-copying of documents, and related activities.

Subject matters of concern include the following: soil, water (inland), water (sea), air, flora, forest, fauna, hunting, toxic substances, non-renewable resources, planning and land use, recreation, wastes, noise, outside advertising, protected areas, import-export, and environment generally.

Documentation is closely interrelated with various other IUCN projects in the field of environmental law, particularly analysis of environmental legislation. In this connection special efforts are made to collect legal documentation.

Special bibliographies have been made and relevant material collected relating to standing to sue and conservation easements in the United States, France and Germany.

A major task has been the compilation of regulations dealing with animal species protection status as well as with their import and export, in connection with preparations for the Plenipotentiary Conference to Conclude an International Convention on Trade in Certain Species of Wildlife.

A great number of inquiries were received and handled at the Centre. Numerous experts from governmental as well as private institutions visited the Centre and made use of its documentation.

The Centre is operated by the IUCN Legal Officer. A Czech lawyer began work in December, and will be responsible for the legislative part of the documentation on a permanent basis.

Analysis of environmental legislation

One of the highlights of the Environmental Law Centre's achievements in 1972 has been the progress made on the indexing and computerizing of the material in the Centre. The object is to provide ready access to the documents, on a topic by topic basis.

The Centre now holds more than 15,000 documents covering all topics in environmental law, and the collection is being extended and expanded. Handling information requests and answering specific questions clearly requires a mechanized information retrieval system.

Efforts towards this goal began in 1968. After several initial steps the IBM/DPS (Data Processing System) was chosen. Then early in 1972 the newest programme in the field of documentation, the IBM/STAIRS programme, was considered even better and adaptation to this system was made.

Input work began in September 1969 with the codification of US federal environmental legislation. By the end of 1972 legislation from the following countries had been codified: Argentina, Canada (Federal), Czechoslovakia (in part), Federal Republic of Germany (in part), France (in part), Great Britain, New Zealand, Peru, Philippines, and the USA (Federal).

Extensive work has been carried out in relation to the thesaurus or list of descriptors. This includes the development of alphabetical and subject matter indexes of key words and the establishment of the relations between them. The thesaurus is now composed of approximately 3,000 key words which in turn are composed of several concepts. The translation of the

thesaurus, originally in English, has been made in French and, to a certain extent, in German and Spanish.

The codification work performed up until 1972 was made possible by a grant from the Volkswagen Foundation. This was a research grant to test the adaptability of data processing methods to legal documentation on a limited but varied and multilingual sample of documents. In addition, funding was made available by the Karl Schmitz Scholl Fonds of the World Wildlife Fund, Germany. IBM accepted on its side to bear the costs of machine time and programming adjustments.

Collaborators between 1970-1972, as far as the input is concerned, have been: Mr. Allen J. Philbrick, post-graduate from the University of Michigan Law School; Mr. Joel W. Kennedy, graduate law student from Queen's University, Kingston, Ontario; Mr. Alfredo T. Nava, Bachelor of Laws and legal officer of the Parks and Wildlife Office in Manila; Mrs. Margarita C. Prado, Peruvian lawyer; Mr. Simon E. K. Reeves, barrister and solicitor from New Zealand; Miss Brigitte Brunner, licenciée en droit from the University of Strasbourg, France; Mr. Alain Diot, licencié en droit from the University of Lyon, France; and Mr. Peter Werle, German lawyer.

The research project was completed in the spring of 1972 and preparations were made to demonstrate the system at Stockholm during the UN Conference on the Human Environment and at Vienna during the Second International Parliamentary Conference on the Environment. The demonstrations took place successfully in Stockholm during the period 6-9 June and in Vienna on 26 and 27 June.

At the demonstrations an explanatory leaflet as well as a preliminary thesaurus were distributed. A final copy of the English thesaurus covering the nine jurisdictions covered by the research project was available at the end of 1972, as well as the German version of the thesaurus, in print-out form, and "inverted lists" (numerical lists) of the key concepts in English and German.

The codification of the legislation of the Federal Republic of Germany, which began in the spring of 1972, continued throughout the year, concurrent with translations of the thesaurus, and work on federal legislation is expected to be completed by late spring 1973.

Efforts were under way at the end of 1972 to enlarge the data bank and make the system operational.

Convention on export, import and transit of certain species of wild animals and plants

At the end of 1972, arrangements were being completed for a Plenipotentiary Conference to Conclude an International Convention on Trade in Certain Species of Wildlife. Hosted by the US Government and scheduled for February 1973, at Washington, D.C., the Conference was seen as the culmination of more than 10 years of preliminary effort by IUCN.

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.

An immense amount of documentation for the Conference was prepared by IUCN.

Feasibility of adoption of US scenic easement system as a conservation technique in Europe

This project concerned the study of a specific legal device, the US conservation easement, which was carried out at the Environmental Law Centre during 1971 and published among the IUCN Environmental Policy and Law Papers in 1972.

David D. Gregory, now a professor of law at the University of Maine (USA), carried out the project. He was helped 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.

It is hoped that this introduction to the US 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.

Standing to sue in environmental disputes

This project describes and compares the prerequisites for private citizens and for groups bringing legal actions designed to protect the environment.

US trends and basic policy questions were studied at the Environmental Law Centre by Mr. David D. Gregory during the summer of 1971. The result of this study was published in 1972 among the IUCN Environmental Policy and Law Papers under the title "Standing to Sue in Environmental Litigation in the United States of America".

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. A study of the "German Law on Standing to Sue" by Professor Eckard Rehbinder of the University of Bielefeld was published in 1972 as Number 3 in the IUCN Environmental Policy and Law Paper series.

Inventory of State environmental law in the USA

This project covers an inventory of State law in the USA (statutes, regulations, and major court decisions) relating to the environment. Currently no inventory is available which will enable rapid access to this information, which ultimately will provide valuable documents complementary to the federal legislation, but also essential ones, as environmental matters are largely under jurisdiction of the individual States.

Activities during 1971 concerning this project included extensive contacts with collaborators, and a survey of all activities of law schools in the US related to environmental problems, to which the response was extremely satisfactory.

Work continued in 1972 with analytical work being carried out by collaborators in the States of Colorado, New Mexico and New York.

ENVIRONMENTAL PLANNING AND MANAGEMENT

Man and his activities have always had a great impact on his environment. Where he has used care in the protection of natural values, the growth of undesirable effects has been minimal, as hundreds of ancient landscapes attest. But where there has been little or no exercise of care - where nature and its needs have been ignored - the effects have been disastrous, as vast areas of the world so clearly show.

IUCN is greatly concerned with the problems of preserving protected environments, in reducing or preventing damage which almost inevitably results from unregulated growth and development in those places which so far have escaped serious damage, and in restoring those areas which have suffered.

To these ends a number of projects, many under the aegis of the Commission on Environmental Planning, have been a major part of the IUCN programme. These involve the development and application of land-use planning theories, and the development of management programmes.

As noted earlier in this report, this year brought the final work on an important book entitled "Ecological Principles for Economic Development". This book provides essential guidelines for the kind of development that will protect and preserve the environment rather than damage it. These principles are basic to a number of projects related to specific areas which are under growing threat.

Ecological guidelines for development in the American humid tropics

The project covers the formulation of ecological principles and guidelines relating to planning development in tropical forest areas of Latin America. An international meeting and the production of publications setting out these principles are key elements of the project.

Ecological principles, in spite of their importance, are not adequately integrated in the development process. This is particularly true in tropical forest areas. Decisions are often taken on the basis of social, political or economic factors with little consideration of the long-term impact. As a result, many areas covered by development projects in the past have shown environmental problems.

The formulation of ecological guidelines for development of humid tropic forest areas was suggested by the Commission on Environmental Planning as part of the follow up of the book prepared under IUCN Project No. 8-2, "Ecological Principles for Economic Development". It was suggested that this might be done through the preparation of a series of papers by selected experts covering ecological principles relating to various aspects of this topic. These papers would be discussed at an international meeting and used as the basis for a pamphlet developed in the light of such discussion.

The project relates to Recommendation 60 of the UN Conference on the Human Environment and to the MAB Programme of UNESCO, Project 1, Ecological Effects of Increasing Human Activities on Tropical and Subtropical Ecosystems. In view of the rapid development in the American tropics, it was considered of great urgency to provide an ecological input to the development process.

At the end of the year it was agreed that the meeting would take place in late 1973 or early 1974 in Venezuela under the theme: The Use of

Ecological Guidelines for Development in the American Humid Tropics.

Officers from government agencies dealing with agriculture, forestry and planning from Latin American countries as well as ecologists and planners from universities and elsewhere will be invited. The technical meeting will consist of six half-day sessions, and will involve about 80 experts.

The place of the ecologist in the development planning team

Up to the present time, ecologists have been used only rarely in development planning. An essential ingredient in the overall objective of conservation is to promote the use of ecological principles in the formulation and execution of economic development projects. Ecologists should therefore form part of the planning team if land and resources are to be rationally used and an ecological balance is to be created or restored.

The present project was suggested by the IUCN Commission on Environmental Planning as part of the follow-up of the book "Ecological Principles for Economic Development".

In consultation with employing authorities and interested persons in selected countries, information and data will be collected at the University of Newcastle-upon-Tyne. From this information and the University's own extensive experience, the material for a concise booklet will be produced to cover: 1. ecological information that would aid environmental planning; 2. the contribution of the ecologist at the survey and analysis stages preparatory to the planning stage, and in an advisory capacity at the planning stage; 3. the process of monitoring environmental planning decisions for their ecological viability; and 4. the contribution of the ecologist in the implementation and management of development projects.

The activities envisaged will be undertaken by the University's Department of Town and Country Planning, under the supervision of Professor Brian Hackett

Guidelines for island development

Because islands are ecologically fragile and extremely vulnerable to the impacts of development and population growth, special guidance is essential in planning development. It is important that island peoples be assisted in their efforts to achieve a higher quality of life, but it must immediately be recognized that their future prospects depend on limited

resources, and on fragile environmental features which islanders feel are important to their "quality of life". Safeguarding these resources is therefore of highest priority.

To further this objective, a pamphlet of about 10,000 words on ecological guidelines for development of islands is being prepared as part of the 1972 programme.

It is felt that this publication will provide planning officials and others with material and methods needed to make increased use of ecological principles in the formulation and execution of economic development projects.

Dr. Edward L. Towle and Mr. John McEachern, of Island Resources Foundation Inc., are the principal authors of the pamphlet, which will be completed next year.

Land use and conservation of resources in the Sahelian zone

The Sahelian zone, a strip of arid grasslands running across Africa along the southern fringe of the Sahara, is a land in transition. This zone includes parts of Mauritania, Mali, Niger, Chad and Sudan. Here increasing population coupled with increasing demand for food and firewood, widespread use of firearms, and diminishing rainfall, have all resulted in abuse of the scarce natural resources and have disrupted the traditional land-use pattern of this particular and fragile zone, leading to the dramatic progression of the desert.

The grim situation for both man and wildlife of this region has led to the development of a project to cover an assessment of ecological, economic and sociological aspects of land use and conservation of natural resources of the Sahelian zone. The project will be concerned with: 1. the elaboration of development plans for rational utilization of the resources of the region based on sound ecological principles and including essential conservation ingredients; 2. provision to decision-makers and planners of information on which to base new land-use policies; 3. evolution of a harmonious balance between man and his environment for the people of the region; 4. arresting desert encroachment; and 5. provision for conservation of wild species and biotic communities in the region, including the establishment or strengthening of Saharan national parks and reserves. These are, of course, essential for survival of such unique animals as the addax, which can exist on only the moisture in the plants it eats, and the oryx.

The Sahelian project grew out of a proposal from FAO for IUCN/WWF to survey the status of the addax and oryx in the marginal lands stabilization

programme of FAO, and will be carried out in close cooperation with that agency.

The future of the Alps

This project covers the organization of an international symposium to review the consequences of human activities, particularly during the last half-century, on the flora, fauna, vegetation and environment of the Alpine region, and to formulate action plans for necessary improvements.

Apart from providing coordinated data on the consequences of past human action on Alpine ecosystems, this symposium should provide conservation and management programmes for future action.

The symposium will take place in Trento, Italy, concurrently with the International Alpine Film Festival, in April 1974. It will be sponsored by IUCN/WWF, the Commission internationale pour la protection des régions alpines (CIPRA), the Union internationale des associations d'alpinisme (UIAA), the Club Alpino Italiano (CAI), and the Festival of Trento, in collaboration with a number of co-sponsors.

"The Green Book"

This project, which began in 1970, covers the identification and description of outstanding and endangered landscapes. It is designed to provide the basis for action to conserve these landscapes for present and future generations to enjoy and use rationally.

The project involves the selection of landscapes, with the help of local and international screening mechanisms, and the compilation of data sheets that will be published as The Green Book.

The initial volume will cover cultural landscapes in Europe.

At the end of 1972, data was beginning to flow into Morges, and publication of the first volume was anticipated in the autumn of 1973.

The landscapes selected are chosen because of their scenic beauty, or their linkage with local cultural history. They are areas that warrant some form of protection through zoning, etc., so that they will not be significantly altered by industrial, urban, or other development.

The Green Book will be issued in loose-leaf form with each landscape described on a separate sheet.

Conservation status of the Mediterranean coast

This project, which started in 1971, has a number of broad and basic objectives. These include obtaining information on status and monitoring the status of various parts of the Mediterranean coast; 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 and scientific reserves; identification of sites for case studies on development; and provision of a basis for priorities and conservation action.

Arrangements have been made in a number of countries whereby data will be accumulated. Collaborators include Italia Nostra and WWF in Italy, and the Société de Protection de la Nature du Languedoc-Roussillon for France. Data are also being furnished for Yugoslavia. The three countries comprise a pilot study area. On the basis of analysis of this work and development of classification methodology, consideration will be given to extending the work to other countries of the region.

The Executive Officer of the Commission on Environmental Planning serves as the clearing house for data and coordinator of this project.

Reconciling tourism and conservation

The project covers the preparation of guidelines for the development of tourism based on ecological principles and the definition of policy for promotion of tourism in developing countries.

Tourism can provide short-term economic justification for the conservation of natural resources and cultural social values. In some countries it provides a major source of revenue. But too often increased tourism has developed in such a way as to endanger natural areas and indigenous wildlife, leading to the depletion of natural resources, and caused visual pollution and cultural degradation. In this way tourism can prejudice its own economic health and future by destroying the very resources on which it is based. It is important that governments, as well as local authorities, should ensure that tourist use of natural and cultural areas does not exceed a level incompatible with safeguarding nature.

The first phase of this work, to occur next year, will be to convene a task force to outline the parameters to be studied and to assign work.

The preparation of policy statements and guidelines will follow, and ultimately the value of tourism in the development process will be assessed.

A discussion group on scientific tourism, which met during the 11th General Assembly, provided the opportunity for a preliminary examination of problems and a discussion of solutions. Resolution No. 5 of the General Assembly deals with this topic.

The project also is related to Projects 5 and 6 of UNESCO's MAB Programme, which are concerned with the impact of human activities on the value and resources of lakes, marshes, deltas, estuaries and coastal zones, and the impact of human activities on mountain ecosystems. It is also related to Recommendation No. 7 of the UN Conference on the Human Environment, which asks for the preparation of short and long-term plans at regional, subregional and sectorial levels for the study and identification of major environmental problems.

CONSERVATION OF BIOTIC COMMUNITIES

The core of IUCN's work over its 24 years of service has been its deep concern for biotic communities and their groups of animal and plant species. During the past year, work has accelerated in a number of directions connected with surveying and monitoring these communities.

In the following sections, a number of projects in this area of concern are reviewed in greater detail.

Revision of Red Data Books

It is a basic responsibility of IUCN to provide information necessary for the protection and proper management of the world's biota. To accomplish this, current and accurate data must be available on the status of wild species of plants and animals and particular attention must be paid to those whose numbers or distribution have been restricted and whose survival is consequently threatened by either the activities of man or natural environmental changes.

National and international conservation legislation is increasingly being based upon the IUCN lists of threatened species contained in its Red Data Book and it is essential that the information contained in it be above reproach and that it be kept up-to-date.

Volume I, *Mammalia*, of the Red Data Book was extensively revised during 1972 for publication early in 1973.

The major revision and reorganization was carried out by the Secretariat, principally by Harry A. Goodwin and Colin W. Holloway, with the advice and guidance of the Survival Service Commission. In the process, data on each listing was carefully reviewed. New information was added, and new sheets for vulnerable species believed likely to move into the endangered category in the near future were prepared.

Information is assembled in the form of short reports under a series of uniform headings. The object of the data sheets is to draw attention to the dangers facing these species, and to provide fundamental background data, as a basis on which to develop conservation or rehabilitation programmes. In addition, by showing at a glance what is known and what gaps need to be filled, it is hoped that the publication of these sheets will stimulate interest in filling the gaps.

The preparation of new sheets and the revision of index sheets, where necessary, will be undertaken periodically and will be available for purchase from the Secretariat.

As a guide to the status of the taxa included, the data sheets are printed on coloured sheets in accordance with the following categories:

1. Red Sheets - *Endangered*

Taxa in danger of extinction, the survival of which is unlikely if the causal factors continue operating.

These taxa are those where numbers have been so drastically reduced that they are deemed to be in immediate danger of extinction.

2. Amber Sheets - *Vulnerable*

Taxa believed likely to move into the endangered category in the near future if the causal factors continue operating.

Included are taxa in which most or all populations are decreasing because of over-exploitation, massive depletion of habitat or other environmental disturbance; taxa with populations which have been heavily depleted by adverse factors, and the ultimate security of which is not yet assured; and taxa with populations which are still abundant but which are under threat from serious adverse factors throughout their range.

3. White Sheets - *Rare*

Taxa with small world populations which are not at present endangered or vulnerable, but which are at risk.

These taxa are localized within a restricted geographical area or habitat or are thinly scattered over a more extensive range. They may be island forms or those otherwise reproductively isolated, or they may be relict forms with wide distribution. They may also be forms seldom recorded

but which may be commoner than supposed although there is reasonable good evidence that their numbers are low.

4. Green Sheets - *Out of Danger*

Taxa formerly included in one of the above categories but which are now considered relatively secure because effective conservation measures have been taken or the previous threat to their survival has been removed.

5. Grey Sheets - *Inadequately Known*

Taxa which are suspected of belonging to one of the first three categories but for which insufficient information is available on which to base a decision.

Plans are being made to begin similar revision work, on other volumes of the Red Data Book. The compilation work on Volume II, Aves, will be handled, as in the past, through collaboration with ICBP.

During 1973, a complete revision of Volume 3, *Amphibia* and *Reptilia*, will be made. Mr. René Honegger, the Compiler of the first issue of this volume, will undertake the new work with Secretariat assistance along the same lines established for Volume I. Publication by the end of 1973 is planned.

Elaboration of a new programme to handle threatened plants was also begun during the year. It has generally been conceded that a new approach for handling plant data must be used because of the very large number of species involved. At present, plans call for threatened species in geographical units or for groups of species having parameters in common to be treated in separate publications.

Directory of Important Wetlands

This project covers arrangements for compiling information on important wetlands and its publication in various forms. The objective is to monitor the conservation status of important wetlands; to provide up-to-date reference and to assist in the protection of representative wetland ecosystems, especially those of international importance. IUCN has accepted responsibility for carrying on the publication, in collaboration with FAO, IBP, ICBP, IWRB, SIL and UNESCO, of the AQUA, MAR and TELMA Lists. These publications are valuable working tools for a wide range of groups concerned with biological sciences, conservation, education, tourism, and recreation. It is essential that such information be kept up-to-date if it is to serve these needs satisfactorily.

The Wetlands Working Group (representing FAO, IBP, ICBP, IWRB, SIL, UNESCO and IUCN) has urged that action be taken to extend the

coverage of the MAR List, to continue the task of up-dating the AQUA List, and to expedite the completion of the TELMA List.

The project covers several related operations: 1. collection and compilation of data for the continuing review of the MAR, AQUA, and TELMA Lists, with which IUCN has been involved for some years; 2. publication of such lists periodically in bound form; and 3. issuance of a Directory of Important Wetlands in loose-leaf form to coordinate the data in a continuously up-to-date form.

Action is needed on the revision of the present MAR list covering Europe and North Africa, and to extend its coverage. IWRB and IUCN Secretariat will collaborate in this work. Cooperation will be sought from collaborators in US, Canada, Japan and Australia in the first phases of extending coverage.

The AQUA List has just been up-dated. It is expected that the present Project AQUA Bureau (Drs. H. Luther, J. Rzóska and E. B. Worthington) will continue its operation with the IUCN Secretariat providing services.

Dr. T. Pritchard is the present compiler of the TELMA List and he will continue work with services provided by the IUCN Secretariat.

The Directory of Important Wetlands will be issued in loose-leaf form. Five volumes are intended, covering Africa, Asia-Oceania, Europe, South and Middle America, and North America. Sheets will be filed by countries. For each country, a summary sheet will specify listed wetlands and will provide general information on their conservation status and a map with the location of the wetlands. Separate sheets will follow for each wetland site listed. The sheets for the various kinds of wetlands (i.e. those corresponding to the several Lists) will be printed on different colours to distinguish them from one another and will vary in content coverage according to the List with which they correspond.

At the end of the year considerable progress had been made on the preparation of essential papers (definitions, criteria, classification, questionnaire, data sheets, etc.) and in the selection of individual consultant/experts throughout the world.

Wetlands Convention

IUCN is named to provide the Secretariat for the Convention on Wetlands of International Importance especially as Waterfowl Habitat. The text of the Convention was settled at an intergovernmental meeting convened by the Imperial Government of Iran at Ramsar early in 1971. UNESCO, as the Depository organization, has finalized the circulation of certified copies

of the Convention to the nations represented at the Ramsar meeting. The Convention is open for adherence at UNESCO headquarters in Paris.

World Directory of National Parks and Other Protected Areas

This project covers arrangements to prepare and publish the World Directory of National Parks and Other Protected Areas which will monitor the conservation status of national parks and equivalent reserves, provide up-to-date reference material, assist in the task of preserving representative ecosystems, and encourage the improvement of the national parks and equivalent reserves of the world. More data and continuous up-dating of information relating to national parks and reserves is essential in IUCN's activities in the monitoring of biotic communities, which are also related to IUCN's involvement in the UNESCO MAB Programme, the World Heritage Convention, the Islands for Science Convention, the Wetlands Convention, and its agreement to carry on the IBP/CT Check Sheet Survey.

Some aspects of the work will be assisted by use of the computer and other data processing facilities of the Nature Conservancy at Monks Wood, England, and the ecological data bank.

The project involves the issue of two publications: 1. an annual "UN List of National Parks and Equivalent Reserves", described elsewhere in this Yearbook, and, 2. a loose-leaf publication "World Directory of National Parks and Other Protected Areas" in which data sheets provide detailed information for the areas of the UN List and for a wider range of protected areas.

Five volumes of the directory will be issued, each eventually of about 500 sheets, covering Africa, Asia-Oceania, Europe, South and Middle America, North America. Sheets will be filed by country. For each country a summary sheet will include general information on administration of the national parks system, legal protection and a map with the location of the protected areas. Separate sheets will follow for each park or reserve deemed worthy of full description. Selection criteria are less rigid than for the UN List and concern size, legal and effective protection, and conservation status.

The directory material will be printed on sheets of different colours to indicate the types of protected areas. It is expected that about 200 sheets will be produced next year, mostly covering the protected areas that were not described in the second edition of the UN List of National Parks and Equivalent Reserves.

Following endorsement at the Second World Conference on National Parks in September, work was undertaken by the Secretariat, in co-operation with the members of ICNP.

By the end of the year, the gathering of data was underway. It is estimated this project will require several years to complete.

1973 version of UN List of National Parks

The 1973 edition of the UN List of National Parks and Equivalent Reserves was in preparation late in the year for publication early in 1973.

The List will be a revision of the English version of the second edition of the List, and its Addendum, published by Hayez, Brussels, in 1971 and 1972, covering data available to 30 June 1972.

It will inaugurate a simplified format without the detailed information on each area contained in earlier versions. The World Directory of National Parks and Other Protected Areas, a new publication now in preparation, will provide such information in much greater detail and scope than was possible in earlier editions of the UN List.

The 1973 List will continue the pioneering work of Professor Jean-Paul Harroy of the University of Brussels and former Chairman of IUCN's International Commission on National Parks (ICNP) who was responsible for Part II of the first edition and for the second edition (French and English versions) of the UN List as well as the Addendum to the English version of the Second Edition.

The new List is being prepared by the Secretariat with the advice and guidance of ICNP. Selection of areas for inclusion in the 1973 UN List was carried out by a panel consisting of Mr. J. I. Nicol (Canada), Chairman of ICNP; Mr. Kai Curry-Lindahl (UNESCO), Dr. Raymond F. Dasmann (IUCN), Professor Jean-Paul Harroy (Belgium), Mr. P. H. C. Lucas (New Zealand), and Dr. Kenton R. Miller (USA).

Seychelles marine national parks

At the request of the Government of the Seychelles, IUCN/WWF early in 1972 undertook to provide scientific and technical advice on the location and management of marine areas in the island group that would be brought under protection as national parks or reserves.

Field work was completed at the end of May and a report was made to the Government in August. The project resulted from the determination

and foresight of the Seychelles Government to conserve the areas where many of the demersal fish breed and develop, on the stocks of which the islanders rely for food.

The results of the field work, undertaken with the close cooperation and assistance of the Government, outlined the detailed management programme for each area selected, with suggestions for utilization covering education, training, research programmes and conservation measures.

The preliminary work confirmed the need to regulate water usage in those areas where the thoughtless anchoring of boats and the activities of shell collectors have not yet destroyed the corals and reef habitats. The Government has already banned the use of spear guns throughout the archipelago.

The creation of marine parks to protect the resource from depletion or destruction, usually associated with intense tourist pressure, will also go far to ensure that the character of the environment will be unchanged and remain a source of pleasure to the viewing tourist and an educational stockpile for student and researcher alike.

The field work was conducted by I. J. B. Robertson, UK.

Handbook on park planning and management

This project involves the preparation of a loose-leaf handbook of guidelines and reference material for persons involved in the planning, establishment and administration of national parks and equivalent reserves.

Initial work to outline the contents and select authors was undertaken following consultation with members of the ICNP.

Reserve areas surveyed in Panama, Guatemala

Following a request of the Minister of Agriculture of Panama, IUCN/WWF undertook an ecological survey of the Volcán Barú region and recommended areas for inclusion in a proposed national park. A report was submitted to the Panama authorities.

The Volcán Barú area is covered by primary cloud forest, a vegetation type of outstanding interest, which is the habitat of the rare quetzal bird *Pharomacrus mocinno*, the horned guan and other unusual and often rare fauna. Besides the volcano peak, which is of great geological interest, the forest includes many giant oak trees and a great variety of orchids and bromeliads.

Dr. Anne LaBastille, a member of the IUCN/SSC, was principal investigator and was assisted in the field study by a small team from the Panamanian Forest Service and the Department of Natural Resources.

The study, part of a coordinated FAO/UNDP Programme, complements and amplifies a long-term plan for Panama prepared by two experts from the US National Park Service in cooperation with FAO.

Later in the spring, Dr. LaBastille undertook to survey the administrative and ecological aspects of a private 1,000-acre cloud forest reserve in Guatemala, located on Volcán Atitlan in the southwestern part of the country. This reserve will be used solely for scientific or educational purposes and it will not be open to public use.

This IUCN/WWF project forms part of the series "conservation of tropical forests in Latin America" and was conducted in collaboration with the International Council for Bird Preservation.

Management plan for Tai Forest National Park, Ivory Coast

This park is part of the last intact lowland tropical rain forest on the west side of the Dahomey Gap. It is the habitat for many large mammals, including a number of endangered species, such as the pigmy hippopotamus, and eight species of higher primates. It was declared a national park in September 1972 and a management plan is needed to ensure preservation and development.

An earlier IUCN/WWF project provided a survey of the Tai forest reserve at the request of the Government to determine present conservation status of the forest and prepare guidelines for the establishment of this area as a national park. Dr. Urs Rahm made the survey for IUCN/WWF and his report was submitted to the Government of the Ivory Coast in September 1971. Further contacts were made in January, this year.

The Government of the Ivory Coast has asked for help in preparing a management plan for the national park. The International Secretariat for Volunteer Services has been asked to provide an ecologist for two years to prepare the plan.

During the second half of 1973, IUCN/WWF expects to send an expert to the Ivory Coast to discuss progress and priorities for action and to organize with the Government requests for international assistance.

Promotion of conservation in Greece

IUCN/WWF have been involved in a number of conservation projects in Greece and authorities in that country have requested assistance in further projects. To provide a formal mechanism for consultation between the various interests involved, a Working Group has been established to provide co-ordinated advice on conservation projects in Greece.

The first meeting of the Group was held in December 1972 when particular attention was given to the protection of waterfowl areas in northern Greece. Some protective measures have already been taken in two areas in which the Working Group has taken special interest. An International Wildfowl Research Bureau representative was in Greece at the year's end to develop these proposals with the Greek authorities.

Costa Rica - National Parks and Reserves

A detailed survey of potential national parks and reserves in Costa Rica has been undertaken by a team of scientists and their report will be used as a basis for action by the Costa Rican Government. The work is being conducted with the full co-operation of Costa Rica's National Parks Department.

The National Parks Department has already set aside and begun the development of four major parks. Several other potential park sites are considered to have top priority but the National Parks Department has not had the resources to initiate studies leading to the preservation of these areas. Among potential sites are the Talamanca Mountains, Osa Peninsula, Cordillera de Guanacaste, Tempisque River Basin, and the Rio Frio region.

Environmental experts conducting the study, headed by Dr. Joseph A. Tosi, Jr., are affiliated with the Tropical Science Centre in San Jose. The work is financed by the World Wildlife Fund.

Ecological study of the Empakaai crater

This project covers an IUCN/WWF study of the ecology of the Empakaai crater area and the preparation of a management plan for the conservation of this area, which is part of the Ngorongoro Conservation Area.

The Tanzania National Parks Board plans to develop this area as a wildlife sanctuary and to open it to tourism. An ecological study is needed

in order to provide the basis for the essential decisions on boundaries, management, preservation measures, tourist use and facilities.

The study is now being carried out by Mr. G. W. Frame with the cooperation of his wife Mrs. Lory H. Frame. Mr. Frame, who knows the area well, is a graduate student in wildlife management at the Cooperative Wildlife Research Unit, Utah State University.

Guidelines for marine parks

As a part of the programme to keep track of the conservation status of marine habitats and to stimulate the establishment of marine parks and reserves, information is being collected on existing and projected marine parks and reserves for a world list of protected marine habitats. The Secretariat has already accumulated considerable information on protected areas, including islands. Data will be presented as sheets in the forthcoming World Directory of National Parks and Other Protected Areas.

Guidelines for establishment of marine national parks were being refined at the end of the year, following their drafting at Banff by a committee of members from the ICNP and the Commission on Ecology. As has already been noted, IUCN is also working to prepare ecological guidelines for development in both coastal and estuarine areas and in island areas.

Promotion of conservation in Madagascar

The project covers the preparation of scientific guidelines for the rational use of Madagascar's natural resources and provision of assistance to the Malagasy Government in developing, coordinating and implementing conservation action programmes to conserve the rich variety of Madagascar's ecosystems.

A draft plan for nature conservation in Madagascar was prepared by IUCN as a basis for discussion during the "Premiere conference internationale sur l'utilisation rationnelle et la conservation de la nature" held in Tananarive, 7-11 October 1970.

The Conference made a number of recommendations for conservation action in Madagascar; since then two IUCN/WWF projects (*Testudo* *nyphora* Biological Survey and Protection of Nossy Mangabe Reserve)

have been funded. A project on Protection of Andohahela Strict Nature Reserve is awaiting funding.

From December 1971 to March of this year Dr. Jean-Jacques Petter carried out a UNESCO mission to prepare the Malagasy participation in the MAB Programme. During this visit close contact was maintained with the FAO expert in the area, ORSTOM and the Service des Eaux et Forêts in Tananarive. Dr. Petter and members of IUCN Secretariat will be concerned with specific tasks in the provision of assistance in planning, coordination and execution of conservation projects, and preparation of educational material.

Biome field stations

Work continued during 1972 on up-dating the IBP/CT working list of ecological field stations which are engaged in long-term biome studies. The list will be published when complete. IUCN would appreciate receiving suggestions on stations to be included and requires the following information: the name and address of the station and its parent organization; the biome it is studying; and the scale, scope and duration of its research programme.

Identification of new national parks and reserves

The collection and analysis of ecological data is essential for the assessment and selection of national parks and reserves to adequately represent the world's major ecosystems.

With the establishment of the International Biological Programme in 1964, the Section on Conservation of Terrestrial Biological Communities (IBP/CT) was assigned the task of examining the world-wide range of ecosystems, of assessing the extent to which adequate samples of these were already protected and of identifying further sites for conservation in order to ensure the safeguarding of a representative series of ecosystems.

This operation was designed to be of maximum value to IUCN and it was agreed that with the termination of IBP/CT activity during 1972, IUCN would have the opportunity of taking over responsibility for any continuing operations in this field.

The data processing and analysis of the IBP/CT material is now operational and IUCN has taken over responsibility for the operation of the work under an agreement with the Nature Conservancy (UK) to cover the arrangements at the Biological Records Centre, Monks Wood.

The Ecological Data Bank now exists at Monks Wood in the form of data on IBM cards and is adapted for computer processing. Access to the computer is via a terminal at Monks Wood. Data already exists from some 2,000 Check Sheets covering a variety of countries, some of them in considerable depth.

The Secretariat is now attempting to gather additional data on representative ecosystems throughout the world. The Nature Conservancy is providing accommodation and other facilities for the operation of the Ecological Data Bank.

The Ecological Data Bank provides a service to supply information to organizations and individuals on request. It is also being used as the basis for the clarification of the ecological status of existing reserves and the basis for selection of new reserves. It will be used in the production of future editions of the World Directory of National Parks and Other Protected Areas, the Directory of Important Wetlands, and similar compilations.

CONSERVATION OF TAXONOMIC GROUPS

IUCN's concern for endangered wild animals has increased over the years as the problems involved in their survival have become more pressing. In addition to the emergency actions to prevent species extinction, much more attention is being paid to such matters as protection of habitat, the rational use of wildlife and the maintenance of genetic diversity.

Considerable effort was spent on the draft Convention of Export, Import and Transit of Certain Species of Wild Animals and Plants and in preparation for an international meeting scheduled in early 1973 to prepare the Convention. In 1972, as usual, a great variety of projects were concerned with individual species. Generally, IUCN worked on these matters through the Survival Service Commission and its Specialist Groups, in full cooperation with the World Wildlife Fund.

The following sections review a few of these projects in broad terms.

"Operation Tiger"

Efforts to save India's hard-pressed tiger from fast-approaching extinction have continually been urged by IUCN and WWF. In the autumn of 1972,

these efforts were expanded with a money-raising and action campaign launched under the name "Operation Tiger".

The problem has been very clear: a fast downward slide in numbers that could have only one conclusion unless arrested promptly - extinction. Within the life-times of most readers of the Yearbook, tigers in India were numbered in tens of thousands. In 1969, during the IUCN 10th General Assembly in New Delhi, the number was estimated at 4,000. Now, not even four years later, the estimated total has dropped to roughly half the 1969 figure.

This is confirmed by a nation-wide survey, undertaken in April and May by the Indian Forest Service, which revealed approximately 1,870 tigers of all ages in all of India! Even though the total is thought to be conservative, the downward trend is ominously unmistakable.

Operation Tiger involves WWF raising a million dollars, but this must be regarded as "seed money". The Government of India intends to allocate about five million dollars in counterpart funds. Establishment of nine reserves for the tiger - which is among the recommendations made to the Prime Minister - will be costly indeed since some of them will be larger than 250,000 ha. In addition, three reserves in Nepal have been selected, together with areas in Bangladesh and Indonesia.

Other recommendations call for reducing opportunities for clashes between tigers and villagers and for reinforcing legislation banning traffic in tiger skins and other tiger "products".

The enormous difficulties in carrying out these measures have not been underestimated, but at the year's end progress could be reported on the fund raising side and in other aspects of the programme.

Working meeting on threatened and depleted seals of the world

The IUCN/SSC Seal Group met at the University of Guelph, Ontario, 18-19 August, to review the current status of threatened and depleted seals and to recommend measures to improve their conservation.

Priority in projected threatened species programmes was accorded, first, to the monk seals (Caribbean, Hawaiian and Mediterranean) and, second, to the fur seals (Galapagos, Guadalupe and Juan Fernandez). In relation to the conservation of the world seal resources as a whole, the meeting recommended: study of the possible effects of commercial fishing on certain seal populations, monitoring of seal populations subjected to control measures, curbs on pollution or development that might impair coastal environments, restriction of human activity in seal whelping

grounds, and initiation of research programmes in all countries that have seals on their coasts.

The proceedings of the meeting will be published in IUCN Supplementary Paper No. 39.

Leopard and cheetah survey

An extensive field survey of the distribution and status of the leopard and cheetah in Africa south of the Sahara was undertaken late in 1971 by IUCN/WWF.

Mr. Norman Myers (Kenya), a conservation ecologist with extensive experience in Africa, is conducting the survey.

The project involves the collection and collation of information on the current distribution of these two species, and the assessment of their present biological, economic, and legal status within their range. Objectives of the work are to arrest the depletion of the leopard and cheetah and ensure their long-term conservation.

For some time there has been apprehension that the leopard and cheetah in Africa had been undergoing excessive exploitation through a trade that had been growing more widespread while remaining largely unregulated. An investigation was considered to be urgently needed to determine more details about the position, and to appraise necessary conservation measures. On these grounds, the International Fur Trade Federation, as a result of conversations with the Survival Service Commission, decided to ask its members to adhere to a voluntary three-year moratorium, which should give time for a more precise evaluation of what has been happening to both these species, and what should be projected for their future.

An interim report on the survey suggests that both species are undergoing attrition, though the leopard less than the cheetah; poaching is the principal factor affecting leopard while habitat disruption is responsible for the major cheetah difficulties.

Preliminary results from three countries of East Africa indicate that the leopard is probably rather more widespread and numerous in parts of savanna Africa than had been suggested. In various habitat types and under varying degrees of pressure, the leopard seems to display a strong capacity to survive.

By contrast, the cheetah could be in a fair degree of danger already and must be considered much more susceptible to accelerating pressures in the future. Rarely very numerous, even in undisturbed environments, it is harried by several other large predators and scavengers and it is

subject to high cub mortality through predation and possibly disease. Generally able to kill only small prey and frequently robbed, it must apparently kill far more often than a leopard and hence is more vulnerable to shifts in prey populations; when gazelle or impala populations decline through intensifying agricultural pressures, the cheetah takes to attacking livestock or more frequently just disappears.

Unlike the leopard, the cheetah in general seems to have become much less frequent over extensive tracts of East Africa in recent years, or to have disappeared completely in substantial areas. Whether this is due to poaching or to the normal processes of development is difficult to say, though it is important to establish the answer in the near future.

It must be emphasized that these are interim findings. Considerable additional work undertaken during the last half of the year is yet to be summarized. This must of course be done and all findings analyzed before conclusions can be published.

Jaguar and ocelot survey

A project to determine the geographical distribution and legal and biological status of the jaguar and ocelot in tropical America and to study their population dynamics and rate of off-take for commercialization was launched by IUCN/WWF early in 1972. The project involved the accumulation of data by extensive interviews of hunters, biologists, officials, traders and local residents, correspondence and study of literature, and about eight months of field studies.

The project investigator is Dr. Carl B. Koford, Research Associate at the Museum of Vertebrate Zoology, University of California, who has many years of experience in the Latin American countries where the two species occur.

The object of the project is to provide information needed in planning programmes to ensure the continued existence of viable populations of jaguar and ocelot and to ensure rational cropping on a long-term basis. Clearly, the level of off-take in early 1972 was making severe inroads into these species, particularly at a time when their habitat is being actively and extensively destroyed or changed over large areas.

The International Fur Trade Federation in September 1970 felt that a moratorium on trade in these cats' pelts was not called for under present circumstances, and that data based on surveys was required as a base for planning further action. Accordingly they agreed to sponsor an IUCN/

WWF survey to determine the actual status of the jaguar and ocelot in South America.

The project was funded by the International Fur Trade Federation, the Frankfurt Zoological Society, the Fauna Preservation Society and the World Wildlife Fund.

Polar bears

Representatives from Canada, Denmark, Norway, the Soviet Union and the United States who comprise the Polar Bear Specialist Group of the SSC, met 7-10 February in Morges. This was the third scientific meeting of the Group, which first convened in 1968. The Group also met in Banff in September on the occasion of the IUCN General Assembly.

Considerable research is being conducted in each of the five countries where the bear occurs, and the Group has served as the mechanism to coordinate and advance these efforts and to promote essential conservation activities. Considerable progress in both areas of concern has been made during the years the Group has been working.

Reports at the third biennial meeting include the following conservation actions.

In Greenland, there are strong hopes that a new National Park, in the north east, will be declared which would protect the main polar bear denning areas in Greenland.

In Canada, polar bears have been protected totally in Newfoundland, along the Labrador coast. A number of provinces now have a system of sealing or identifying polar bear pelts to prevent illegal traffic.

New hunting regulations were introduced on 1 September 1970 in Svalbard (Spitzbergen) and Jan Mayen Island, Kong Karls Land has been given temporary reserve status, and all polar bear sport hunting from ships in the Svalbard region ended last year.

In Alaska, hunting permits for trophies were reduced to 300 in 1971; the unlimited bag for residents who hunt from the ground and use bears for food was reduced to three per hunter. The use of aircraft for hunting polar bears may be banned after 1972.

Total prohibition of polar bear hunting throughout the Soviet Union arctic continued, and more stringent protection for denning areas has been introduced in certain parts of Siberia.

It was recognized that the gradual reduction in polar bear harvests would reduce the recoveries of marked bears in certain regions, and that this

situation demanded the design of new forms of tags that would be visible on live animals.

Cooperative international programmes were adopted for the examination of parasite loads and pesticide and PCB residues in bears, using standard techniques at special centres. The parasitic work will be handled in the Soviet Union, while the pesticides work will centre in Canada.

Delegates' attendance at the Morges meeting was supported by the various governments concerned. The New York Zoological Society provided fund support, through the Conservation Foundation, for publication of the proceedings, administrative costs and contingencies.

With the collaboration of the Group, IUCN prepared drafts for a Convention on Conservation of Polar Bears and an Interim Agreement to be entered into by the five polar nations pending the conclusion of the Convention. It is hoped that an intergovernmental meeting will be held in 1973 to consider these drafts.

Whales

In some respects 1972 could be called the Year of the Whale. Action to protect these oceanic mammals from further commercial exploitation, long smoldering in the US and other countries, caught fire at Stockholm where the UN Conference on the Human Environment by formal Recommendation called for a 10-year moratorium on commercial whaling.

Three months later, the IUCN 11th General Assembly added its endorsement to this recommendation by calling for a moratorium on the capture of "any species for which scientific evidence does not clearly support continued harvest".

A new publication in the IUCN monograph series under the title "Small Whale Fisheries of the World", is being prepared for issuance in 1973.

Marine turtles

Conservation and research programmes on marine turtles continued actively throughout 1972.

There was no formal meeting of the Marine Turtle Specialist Group, which convened in Morges in 1969 and again in 1971, but progress was reported from all areas where its members are working. Tagging and other biological survey activities, identification and protection of nesting beaches, and work to develop hatchery programmes were all advanced.

All species of marine turtles were under increasing pressure during the year. While there were a few significant advances in conservation - as, for example, Sri Lanka's action in bringing all five species in its waters under full protection - over exploitation continued to be a matter of great concern.

The Third Working Meeting of the Marine Turtle Group is planned for Morges in 1973-74.

ENVIRONMENTAL EDUCATION

Over the years, IUCN has given a great deal of attention to creating active environmental awareness. Publications and recommendations arising from meetings of specialists sponsored by IUCN have been particularly concerned with the development of curricula, teaching materials and teaching methods for environmental education at all levels of formal education, as well as the techniques for introducing ecology and conservation in existing programmes.

A series of conferences, seminars and workshops arranged by IUCN has brought the need for special action in environmental education strongly before governments, and there is now acceptance in many countries of Europe, including the socialistic countries, North America and a few places elsewhere, of the environmental approach in programmes at primary, secondary and tertiary levels. One such major meeting was the first European Working Conference on Environmental Conservation Education held at Rüslikon, near Zürich, Switzerland, in December 1971. Conclusions of this meeting have been widely promulgated in many countries and have reached thousands of specialists.

In June 1972 an international seminar on environmental education in the school curricula in East European countries was held under IUCN auspices in Poland. This meeting set up a continuing process for revision and innovation of environmental education in the school curricula and programmes in the countries concerned. A similar international workshop on recent developments in environmental education was held in Canada immediately preceding the Banff General Assembly, and the conclusions were published in the IUCN Bulletin.

Two courses affecting teacher training were arranged by IUCN in July and August 1972 in the Netherlands and North Wales, both on the basis of international participation.

Special techniques in environmental education developed by the US National Park Service were the subject of a major demonstration and discussion during the Second World Conference on National Parks in September. These were extremely well received, again illustrating the growing awareness of park directors and other natural resource managers of the necessity of making wider use of the educational resources under their control.

Following are reports on a number of active projects carried out during the year in this area of concern with the advice and cooperation of the Commission on Education.

Popular publications on environmental conservation

The project covers the preparation, publication and distribution of small booklets on environmental conservation problems and solutions for young people in three selected countries as an experiment with techniques.

One way to achieve appropriate awareness and cooperative approach in environmental conservation matters among the broad general public is to spread the environmental education message among the youth - the future managers of the country. Kenya in Africa, India in Asia, and Venezuela in Latin America are the countries selected for the project. Free distribution of the publications is being considered.

The books will be locally written and produced, and will be designed for each country. Local experts are collaborating with the Secretariat to produce the booklets.

UNESCO, through its Gift Coupon Programme, has included this environmental conservation education project in its programme. Although UNESCO cannot guarantee that funds will be forthcoming, it is believed that the fund raising campaign through this Programme will be successful.

Methods handbook on environmental conservation teaching in primary and secondary schools

During the year work was advanced substantially on this project, which is being funded by UNESCO on a contract basis. Professor R. N. Saveland of the University of Georgia, Athens, USA, heads the Task Force, and is editor of the handbook. The draft manuscript is to be circulated early in 1973 for expert comment.

Multilingual dictionary of conservation terms

Conservation is developing rapidly. It is a multidiscipline activity, having few dogmas and few rigid systems. Even its oldest branch, which deals with the protection of natural features, has no settled terminology. To ensure effective communication it is clearly desirable that international agreement on conservation terminology should be achieved to the fullest extent possible.

Accordingly, the IUCN Executive Board several years ago approved the proposal made by the Chairman of its Commission on Education, that IUCN should join with the Central Laboratory for Nature Conservation of the USSR Ministry of Agriculture in compiling this multilingual dictionary of conservation terms.

This project, reported on in two preceding Yearbooks, has now progressed to the publication of a tentative edition. It covers some 260 terms in English, French and Russian; the German and Spanish equivalents are being prepared. The book is issued as a preliminary working tool for use in further elaborating the Dictionary.

It will be obvious that this dictionary does not contain all terms in use. The entries have been chosen to define conceptual systems and sub-systems in the several branches of the science and practice of conservation. Among terms relating to the structure of natural complexes (biogeocoenoses), those that reflect the attitude of man and societies to nature have been given preference. Existing terms in specific disciplines already covered in other vocabularies (e.g. taxonomy of plants and animals, agriculture, forestry) have been reduced to a minimum. Many other terms have also been omitted where their meanings are clear from their etymology, or by analogy to other words included in the dictionary.

The definitions aim to strike a balance between precision and simplicity. The dictionary is not a compendium, and its definitions cannot include all the possible uses of terms or take into account all exceptions. To keep the text within bounds and to facilitate translations, definitions have been limited to ten significant words wherever possible.

The major part of the compiling work was carried out in the Central Laboratory for Nature Conservation in Moscow and in the IUCN Secretariat. Difficult cases of reconciling selection and definition of terms were resolved in meetings at Morges, the last being in May 1972. Outside consultants in many countries assisted in the work.

It is hoped that the definitive edition in English, French, Spanish, German and Russian can be printed in 1974.

International workshop on environmental education programmes related to mountain environments

The project covers the organization of an international meeting on environmental education with special attention to conservation aspects of the mountain environments, particularly the mountain areas of Europe which are coming under heavy pressure.

It is proposed to organize a 12-day workshop in Aosta, Italy, 4-15 September 1973, under the joint sponsorship of IUCN, WWF, Union Internationale des Associations d'Alpinisme, Italian Nature Federation Pro Natura, Société de la Flora Valdôtaine, and the Government of the Autonomous Region of the Aosta Valley.

The workshop will endeavour to agree on priorities for conservation education in mountain environments and to produce, through a consensus of various groups involved, a methods book for use in connection with conservation education in mountain areas.

Several Italian conservation and education organizations have established an Environmental Education Centre in Aosta, Italy. The Centre, with the assistance of cooperating bodies and persons, will be used to organize the workshop.

The tentative project outline prepared by the IUCN Secretariat in consultation with interested collaborators was endorsed by the IUCN Commission on Education at its 32nd meeting at Banff, Canada, in September 1972.

The optimum number of participants at the workshop will be 30, 10 being from the host country. Although primarily for those concerned with European mountain environments, international specialists from overseas may be invited.

Filmstrips on environmental conservation

The project covers the preparation of a series of filmstrips on environmental conservation to be used as teaching aids.

It has been felt for a long time that IUCN should prepare and produce materials of this kind.

Filmstrips already produced by a commercial group were shown to the members of the IUCN International Course for Teacher Training in Environmental Conservation and Education held in Wales, UK, in August. The participants, who were of 10 nationalities, were impressed by the value of such materials and recommended action to produce filmstrips of this kind concerned with international aspects.

Arrangements are to be made to prepare series dealing with three broad topic areas: 1. basic questions - the biosphere, national parks, endangered species of the world, etc.; 2. specific forms of environmental education - nature trails, visitor centres, etc.; 3. special environments and their problems - mountains, marine habitats, deserts, etc. All will be dealt with from an international viewpoint.

As presently planned, IUCN will provide original transparencies and draft notes for the explanatory booklets. The strips and booklets will be produced commercially.

International workshop on environmental studies in higher education and teacher training

Since the IUCN Seminar on Environmental Conservation Education at the University Level, held in Lucerne in 1966, there have been rich developments in terms of new environmental education programmes launched at universities, colleges and other institutions of higher education all over the world.

As a result of this burgeoning interest, the need for review and assessment of the whole field had been felt for some time. The 1972 pre-IUCN General Assembly working meeting on education was devoted to the review and discussion of problems of environmental teacher training. This topic has also been dealt with at two special IUCN-sponsored international courses during the summer of 1972.

The International Workshop on Environmental Studies in Higher Education and Teacher Training assembled about 70 representatives of educational programmes, mostly university and college teachers, from 25 countries. It was hosted by the Althouse College of Education, University of Western Ontario, London, Ontario, Canada, from 5 to 7 September 1972. Professor Paul B. Park, Director of the Early School Environment Study project of the host institution, chaired the Workshop and the Organizing Committee.

The Workshop split into seven working groups to discuss three main themes: 1. training of teachers in pre-service and in-service education; 2. environmental programmes for under-graduate students; 3. environmental education in professional fields.

One particularly important issue identified at the Workshop was the urgent priority in reaching decision makers by appropriate environmental education. This was also reflected in Resolution No. 23 (Environmental Education for Professionals) of the General Assembly.

International seminar on environmental education in the schools in eastern European countries

This meeting was organized to bring attention to 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 was held at Pieniny National Park from 22-28 June 1972. It was organized by the East-Europe Committee of the IUCN Commission on Education with Dr. T. M. Szczesny of Poland and Ing. M. Hirs of Czechoslovakia in charge.

International course for teacher training in environmental conservation and education

This project covered a ten day course at the Drapers' Field Centre, Caernarvonshire, North Wales, United Kingdom, 2-12 August 1972, under the joint sponsorship of IUCN, the British Field Studies Council and The Nature Conservancy in conjunction with the Prince of Wales' Committee.

Emphasis was placed on the development of techniques for teaching environmental studies. Much of the course consisted of fieldwork, but time was also allotted for exchange of information and discussions to relate the course to the variety of teaching situations experienced elsewhere.

The three main themes covered were:

1. Teaching FROM the environment - with emphasis on open-ended environmental work in which there is no pre-conceived syllabus, but where the main concern is investigation and enquiry and the development of the learning process. This is most commonly associated with studies by younger children.
2. Teaching ABOUT the environment - which covered studies based on a specific topic or a restricted area in which the main consideration is academic study to gain information and comprehension. The major part of the field studies at secondary level in Britain falls in this category.
3. Teaching FOR the environment - where conservation, visual amenities, environmental quality and wise use of resources were the main objects.

The course was directed by the staff of the Drapers' Field Centre and Nature Conservancy together with specialists from IUCN and invited contributors.

EXTERNAL RELATIONS

IUCN maintains close working relationships with a large number of organizations outside the Union. As conservation action increasingly becomes interdisciplinary and international, the importance of these links grows.

One of IUCN's principal roles has been that of a catalyst to bring about the successful cooperation of groups toward achievement of environmental action goals.

Some highlights of IUCN's 1972 work with external organizations are briefly noted in the following paragraphs.

United Nations Organization

IUCN continued to maintain liaison with the UN organization in New York and in Geneva. During the year special efforts went into preparation for the UN Conference on the Human Environment, in which IUCN had an important role as a non-governmental organization, and a working relationship was maintained in the months after the Stockholm meeting with the Conference Secretariat, which became the United Nations Environment Programme (UNEP).

In addition to its close working relationships with the Economic and Social Council, IUCN enjoys formal consultative status with ECOSOC and five UN agencies, FAO, UNESCO, UNIDO, WHO and WMO.

FAO

IUCN works closely with the Food and Agriculture Organization (FAO) of the United Nations, on topics of mutual interest particularly on matters concerning wildlife and national parks. In addition FAO collaborates in

the sponsorship of meetings and conferences, and on a number of occasions has made facilities for such gatherings available to IUCN.

FAO co-sponsored the Second World Conference on National Parks held in September 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.

UNESCO

IUCN worked closely with UNESCO on several projects. Foremost among them was the Second World Conference on National Parks, which UNESCO co-sponsored and helped finance the travel of experts from several countries to the Conference in the USA.

UNESCO also co-operated in a number of IUCN activities in conservation education, among them contract support for the methods handbook on environmental conservation education in primary and secondary schools, and the preparation of basic booklets on conservation for young people in three different tropical countries.

IUCN receives financial support in the form of a subvention which is used for meetings and the publications programme.

UNIDO

IUCN conferred with UNIDO on a number of occasions during 1972, particularly in connection with the UN Conference on the Human Environment.

WHO

Official relations between the World Health Organization (WHO) and IUCN were established by the Executive Board of WHO which held its 49th Session in Geneva in January. WHO thus became the fifth UN agency with which IUCN maintains official relations.

WWF

The close working relationship with the World Wildlife Fund has been mentioned earlier in the Yearbook. Weekly meetings of the senior executives of both organizations are used to decide questions of joint project management and policy. Separate staff meetings cover technical aspects of projects, publicity, education and other matters.

Due to the continued freeze on new construction in Geneva, there were no major new developments in the matter of the joint IUCN/WWF Headquarters at Geneva.

ICBP

IUCN continued to maintain close links with the International Council for Bird Preservation (ICBP), to whom all matters relating to birds have been referred.

Other Organizations

During 1972 IUCN maintained growing contact with organizations throughout the world having an interest in various aspects of the environment.

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 Commission Internationale pour la Protection de la Région Alpine, the International Association of Water Pollution Research, the Conseil International de la Chasse, the Fauna Preservation Society, the International Federation of Landscape Architects, the International Planned Parenthood Federation, the International Youth Federation, and the Inter-Parliamentary Association.

Special note is made of the establishment of a consultative arrangement between IUCN, the International Council of Scientific Unions (especially IBP and the Special Committee on Problems of the Environment), and the International Social Science Council, to develop further their collaboration in the natural and social sciences. In addition to providing a more effective non-governmental approach to environmental problems, the

arrangement also enhances the complementary contributions made by these bodies to the activities of the UN and its specialized agencies.

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, and the National Park Service of the Department of the Interior, the Conservation Foundation and the Smithsonian Institution; and, in the United Kingdom, with the Nature Conservancy.

Conferences and meetings

IUCN sponsors and participates in a large number of meetings. These constitute the forums where the statutory and normal business of the Union is conducted, and where the work of conservation - in all its forms and aspects - is planned, organized, and directed. Meetings serve a variety of other useful purposes, principally providing opportunities for the exchange of information, the fertilization of ideas, and the promotion of wider acceptance of the basic principles of good environmental management.

1972 conferences and meetings sponsored or co-sponsored by IUCN

February 7-10	SSC Polar Bear Specialist Group, Morges.
March 24	Environmental Planning Commission, Morges.
April 28-29	Survival Service Commission, Jersey, Channel Islands.
May 29-30	18th IUCN Executive Committee, Morges.
June 10	Ecology Commission, Stockholm, Sweden.
June 22-28	East Europe Committee, Commission on Education, International Seminar on Environmental Education in School Curriculum in East-European Countries, High Tatra and Pieniny National Park, Czechoslovakia/Poland.
July 11-21	International North-West European Teacher Training Course in Methodology of Environmental Education, Wilhelminaoord, Netherlands.
July 26-August 7	17th IYF General Assembly, Herrljunga, Sweden.
August 2-12	International Course for Teacher Training in Environmental Conservation and Education, the Drapers' Field Centre, Wales, UK.
August 18-19	SSC Seal Group, Guelph, Ontario, Canada.

August 19	SSC Primate Group, Portland, Oregon, USA.
September 5-7	International Workshop on Environmental Studies in Higher Education and Teacher Training, London, Ontario, Canada.
September 8	SSC Polar Bear Specialist Group, Banff, Canada.
September 9	Meetings of IUCN Commissions, Banff, Canada.
September 10	51st Session of IUCN Executive Board, Banff, Canada.
September 11-16	11th IUCN General Assembly and 12th Technical Meeting, Banff, Canada.
September 16	52nd Session of IUCN Executive Board, Banff, Canada.
September 18-27	Second World Conference on National Parks, Yellowstone and Grand Teton National Parks, Wyoming, USA.

1972 conferences and meetings at which IUCN was represented

Sponsor

International Council of Scientific Unions	Special Committee on Problems of the Environment (SCOPE), Amsterdam, Netherlands.
FAO	Fourth Session of the Working Party on Wildlife Management, Nairobi, Kenya.
British Foreign Office	Conference on the Conservation of Antarctic Seals, London, UK.
United Nations	4th Meeting of the Preparatory Committee for UN Conference, New York, USA.
Wildlife Management Institute	North American Wildlife Conference, Mexico City, Mexico.
UNESCO	Meeting of Experts on World Heritage, Paris, France.
Council of Europe	European Committee for the Conservation of Nature and Natural Resources, Strasbourg, France.
United Nations	Conference on the Human Environment, Stockholm, Sweden.
Government of Malta	Pacem in Maribus, Malta.
International Biological Programme	V General Assembly, Seattle, Washington, USA.
International Federation of Landscape Architects	XIII IFLA Congress, Brussels, Belgium.

Contacts and enquiries

In addition to its official contacts with members and the international conservation community, the Secretariat deals with a continual stream of correspondence and visitors from all parts of the world.

Most of this traffic is directed to Morges, but a considerable volume goes to Bonn where IUCN's Environmental Law Centre is located. IUCN has long been a recognized source of information and advice on a wide range of conservation topics, in addition to its well-known role in endangered species. With the upsurge of world interest in environmental matters the volume of these unofficial contacts and enquiries has increased sharply. The Secretariat does its best to deal with this volume of work, which it regards as an important part of the Union's general educational and informational mission.

IUCN ORGANIZATIONAL MATTERS

Commissions

IUCN's six Commissions remained basically unchanged in structure during 1972. However, in the spring it was decided that the Commission on Landscape Planning should be given wider terms of reference.

Within the framework of IUCN's main objective and in cooperation with other Commissions, the Union's policy and programmes in the field of environmental planning and management are guided by this Commission.

It is concerned primarily with the applied aspects of the impact of man on the environment, particularly the impact on fragile ecosystems, impacts arising from "development projects", increased tourism, and the expansion of industry. Thus it is involved with the urban/rural development cycle, land use planning, planning of human settlements, and the application of ecological principles to development and to concrete action programmes.

Within this broad framework, the Commission devises and acts as a clearinghouse for specific projects according to assigned priorities, and monitors any such projects included in IUCN's programme.

It was agreed that in functioning the Commission will constitute itself whenever necessary into two main Committees:

1. Committee on Environmental Management, which will be concerned primarily with the evolution of management techniques for enhancing diversity as well as forestalling or reducing the environmental disturbances resulting from man's activities and related topics; and
2. Committee on Landscape Planning, which will be concerned primarily with topics relating to the planning of areas not set aside as parks or reserves, including the planning of human settlements, conservation of cultural landscapes and related topics.

The new title "Commission on Environmental Planning" was approved

by the General Assembly in lieu of "Commission on Landscape Planning". The old name was considered inadequate in view of the wider scope of the Commission's activities.

At the end of the year, five Commissions were operating under full-time Executive Officers at Morges. Dr. John Staub left the post of Executive Officer, Commission on Environmental Policy, Law and Administration, at the end of September. Dr. Jan Cerovsky, who had served as Executive Officer for the Commission on Education since early 1969, ended his assignment in Morges at the end of December in order to return to his duties in Czechoslovakia.

All appointments to Commission membership ended at the Banff General Assembly. Subsequently the Executive Board made new appointments.

See Appendix B for the lists of new members of all six Commissions. Appendix C lists the members of the Executive Board and Commissions serving until these groups were dissolved at the 11th General Assembly. Appendix D lists the members of Committees, Working Groups and Task Forces.

Honorary Members

The IUCN 11th General Assembly appointed Mr. Harold J. Coolidge an Honorary Member with the title Honorary President in appreciation of the special contributions he has made to the development of the Union. He took part in the historic event at Fontainebleau when the Union was founded in 1948 and has devoted himself to the affairs of the Union ever since.

He served IUCN in many capacities, culminating in his outstanding six years of office as President which marked the expansion and strong development of the organization that now exists and which has received wide recognition and appreciation.

Professor Jean-Paul Harroy also was appointed an Honorary Member in recognition of his devoted service to the Union in the compilation and production of the UN List of National Parks and Equivalent Reserves, as Chairman of the ICNP, as the first Secretary-General of the Union, and in many other ways. Professor Harroy, one of the pioneers of the conservation movement, has devoted himself to conservation action throughout the world. He had a special responsibility for national parks in Africa and has given help and advice to many governments in the creation and improvements of their national park systems.

Honorary Presidents

- 1954 Charles-Jean Bernard (Switzerland) †
1972 Harold J. Coolidge (USA)

Members of Honour

- 1948 P. G. van Tienhoven (Netherlands) †
1950 A. Chevalier (France) †
1950 Sir Julian Huxley (UK)
1952 Hugh H. Bennett (USA) †
1954 A. Ghigi (Italy) †
1956 Prof. E. Laurence Palmer (USA) †
1958 Prof. W. Szafer (Poland) †
1958 Tsuyoshi Tamura (Japan)
1960 Lord Hurcomb (UK)
1960 Victor van Straelen (Belgium) †
1966 Prof. Jean Baer (Switzerland)
1972 Jean-Paul Harroy (Belgium)
† *Deceased*

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 is awarded at IUCN General Assemblies.

There have been four awards:

- 1963: Mr. E. M. Nicholson, (UK)
1966: Dr. Enrique Beltran (Mexico)
1969: Shri Salim Ali (India)
1972: H. R. H. The Prince of the Netherlands

Publications

During 1972, the Bulletin was published monthly, greatly increasing the Union's communication with its members. The Annual Report appeared for the second time in its new format as the IUCN Yearbook for 1971. Two publications were issued in the New Series, and three in the Supple-

mentary Papers series. Three Environmental Law Papers were also published. The complete list is shown in Appendix F.

Financial matters

Major financial assistance to the Union from the Ford Foundation continued through 1972 with the final apportionments from its three-year grant, No. 700-0243, which has totalled US \$ 650,000. This generous grant enabled the Union to embark on its present expanded programme.

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

The World Wildlife Fund also continued its major support of IUCN, 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 was continued in 1972 and assisted IUCN in many phases of its work, not least with publications. In addition, UNESCO provided a special grant to assist experts from developing countries to participate in the Second World Conference on National Parks. The Union wishes to acknowledge this assistance with appreciation.

FAO's grant for work in connection with the Second World Conference on National Parks is acknowledged with appreciation.

Several organizations and individuals contributed to the funding of projects and special activities. Grants were received during 1972 from the following sources:

Alexander von Humboldt Foundation

American Committee for International Wild Life Protection, Inc.

American Conservation Association

The Charles Engelhard Foundation

Cleveland County Bird Club

The Conservation Foundation

Fauna Preservation Society

Federal Ministry of the Interior (FRG)

Fonds für Umweltstudien

IBM-Germany

Institut für Dokumentationswesen

International Fur Trade Federation

International Society for the Protection of Animals

Jachtfonds Netherlands

Karl Schmitz Scholl Fonds
Mr. John W. Mattingly
New York Zoological Society
Public Administration Division, United Nations
Rockefeller Brothers Fund
Schutzgemeinschaft Deutsches Wild
Swedish International Development Authority
R. T. Vanderbilt Trust
Van Tienhoven Foundation
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 G.

Gift to Library

The Van Tienhoven Library at IUCN headquarters was enriched with a generous gift of about 300 books, several hundred journals and a collection of documents on world-wide conservation and wildlife. Dr. and Mrs. Henry Field of Coconut Grove, Miami, Florida, donated the material which was collected as part of the research for the Man and Nature Studies, inaugurated by Dr. Field. Sixteen of these studies have been published, as well as 5 volumes of a Conservation and Wildlife Bibliography which was linked with the project.

Membership

IUCN membership as at 31 December 1972 included 29 State members, 282 national organization members, and 18 international organization members in a total of 82 sovereign states. The full list is printed in Appendix A.

Panama withdrew its application for State membership.

Sixty-seven national organization members (including public services, governmental departments and other governmental bodies and private non-governmental organizations) and 7 international members were ratified by the General Assembly.

The number of individuals affiliated with the Union as Supporters increased to 736.

APPENDIX A

State Members

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

Organization Members

Argentina	Administración General de Parques Nacionales, Ministerio de Agricultura y Ganadería Comité Argentino de Conservación de la Naturaleza Dirección de Conservación de la Fauna de la Provincia de Buenos Aires Instituto de Investigaciones de las Zonas Áridas y Semiáridas
Australia	Australian Conservation Foundation Department of Fisheries and Fauna, W. Aust. Fisheries and Wildlife Department, Victoria National Parks and Wildlife Service, N.S.W. National Parks and Wildlife Service, S. Aust. National Parks Board of Papua and New Guinea Wildlife Preservation Society of Australia
Austria	Österreichischer Naturschutzbund
Bahamas	Bahamas National Trust
Bangladesh	Bangladesh Wildlife Preservation Society
Belgium	Ardenne et Gaume Institut Royal des Sciences Naturelles de Belgique Jardin Botanique National de Belgique Koninklijke Vereniging voor Natuur- en Stedschoon Laboratory for the Conservation of Nature, University Centre of Antwerp Musée Royal de l'Afrique Centrale Société Royale de Zoologie d'Anvers Université de Liège Université Libre de Bruxelles
Brazil	Associação de Defesa da Flora e da Fauna Coordenadoria da Pesquisa de Recursos Naturais Fundação Brasileira para a Conservação da Natureza Instituto de Conservação da Natureza
Bulgaria	Commission pour la Protection de la Nature de l'Académie des Sciences de Bulgarie Ministère des Forêts et de la Protection de l'Environnement en RP de Bulgarie
Canada	Canadian Council of Resource and Environment Ministers Canadian Nature Federation Canadian Wildlife Service, Quebec Carleton University Library Centre for Environmental Biology, Memorial University of Newfoundland Conservation Council of Ontario Department of Mines, Natural Resources and Environmental Management, Manitoba Federation of Ontario Naturalists

	Les Cercles des Jeunes Naturalistes Metropolitan Toronto Zoological Society Ministry of Natural Resources, Ontario National and Historic Parks Branch, Department of Indian Affairs and Northern Development National and Provincial Parks Association of Canada Nature Conservancy of Canada Société Zoologique de Québec University of Ottawa Central Library
Chile	Comite Nacional pro Defensa de la Fauna y Flora Instituto de la Patagonia
Colombia	Instituto de Ciencias Naturales, Universidad Nacional de Bogotá Instituto de Desarrollo de los Recursos Naturales Renovables
Cuba	Sociedad Cubana para la Protección de la Naturaleza y sus Recursos
Cyprus	Cyprus Geographical Association
Czechoslovakia	Slovenský ústav pamiatkovej starostlivosti a ochrany prírody Správa Tatranského národného parku Státní ústav památkové péče a ochrany přírodný
Denmark	Danmarks Naturfredningsforening Friluftsrådet Naturfredningsraadet
Ethiopia	Ethiopian Wildlife and Natural History Society
Fiji	National Trust for Fiji
Finland	Finnish 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 Conservation de la Nature Office de la Recherche Scientifique et Technique Outre-Mer Société Botanique de France Société Nationale de Protection de la Nature et d'Acclimatation de France Touring Club de France
German Democratic Republic	Deutscher Kulturbund, Sektion Natur und Heimat
Germany (Fed. Rep. of)	Institut für Landschaftsforschung und Naturschutz, Akademie der Land-wirtschaftswissenschaften Arbeitsgemeinschaft Deutscher Beauftragter für Naturschutz und Landschaftspflege Bundesanstalt für Vegetationskunde, Naturschutz und Landschaftspflege Bund für Naturschutz in Bayern e.V. Deutsche Gesellschaft für Säugetierkunde 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 e.V. Zoologische Gesellschaft von 1858
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	Asociación "Amigos del Bosque"
India	Bombay Natural History Society Ecology Council, Gujarat State Indian Board for Wild Life, Ministry of Food and Agriculture Wild Life Preservation Society of India Institute for Nature Conservation
Indonesia	Department of Environmental Conservation
Iran	An Taisce - The National Trust for Ireland
Ireland	

	National Institute for Physical Planning and Construction Research, Department of Local Government National Parks and Monuments Branch, Office of Public Works
Israel	Nature Reserves Authority Society for the Protection of Nature in Israel
Italy	Associazione Italiana per il World Wildlife Fund Azienda di Stato per le Foreste Demaniali Centro di Sperimentazione Agricola e Forestale Commissione di Studio per la Conservazione della Natura e delle sue risorse del Consiglio Nazionale delle Ricerche Ente Parco Nazionale Gran Paradiso Federazione Nazionale Pro Natura Istituto Policattedra di Biologia Animale, Università di Catania Italia Nostra Laboratorio di Zoologia applicata alla Caccia, Bologna Parco Nazionale d'Abruzzo Rete Fenologica Italiana Unione Italiana Pro Natura
Japan	Japanese Association of Zoological Gardens and Aquariums 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 Wild Life Society
Korea (Dem. People's Rep. of)	Korean Association for Protection of Nature
Korea (Rep. of)	Korean Commission for Conservation of Nature and Natural Resources Korean National Parks Association
Lebanon	Natural History Museum Société des Amis des Arbres du Liban
Malawi	Ministry of Agriculture and Natural Resources
Malaysia	Game Branch of the Forest Department, Sabah Malayan Nature Society Sabah National Parks Trustees Sarawak Museum World Wildlife Fund Malaysia
Mexico	Instituto Mexicano de Recursos Naturales Renovables, A.C.
Netherlands	Contact Commissie voor Natuur- en Landschapsbescherming Koninklijk Zoologisch Genootschap, Natura Artis Magistra Koninklijke Nederlandsche Toeristenbond Koninklijke Nederlandse Natuurhistorische Vereniging Nederlandse Onderwatersport Bond Nederlandse Vereniging tot Bescherming van Vogels Nederlandse Vereniging van Dierentuinen Stichting het Nationale Park de Hoge Veluwe Stichting het Wereld Natuur Fonds (Nederland) Stichting tot Internationale Natuurbescherming Vereniging tot Behoud van Natuurmonumenten in Nederland
New Zealand	Voorlopige Natuurbeschermingsraad 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 Pakistan Wildlife Appeal
Peru	Ministerio de Agricultura, Dirección General Forestal de Caza y Tierras
Philippines	Parks and Wildlife Office, Department of Agriculture and Natural Resources 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	Centro de Documentação Científica, Instituto de Investigação Científica de Angola Direcção dos Serviços de Veterinária, Mozambique Direcção-Geral dos Serviços Florestais e Aquícolas
Rhodesia	Atlantica Foundation Natural Resources Board
Romania	Commission pour la Protection de la Nature de l'Académie de la RS de Roumanie
Senegal	Institut Fondamental d'Afrique Noire
Singapore	Singapore Zoological Gardens
South Africa	Department of Nature Conservation of the Province of Transvaal Department of Nature Conservation of the Provincial Administration of the Cape Natal Parks, Game and Fish Preservation Board National Parks Board of Trustees of the Republic of South Africa Nature Conservation Division of the Orange Free State Province Nature Conservation and Tourism, Windhoek, S.W.A. Percy Fitzpatrick Institute of African Ornithology South African Council for Scientific and Industrial Research Wild Life Protection and Conservation Society of South Africa
Spain	Agrupación Española de Amigos de la Naturaleza Comisión de Defensa de la Naturaleza de la Diputación Provincial de Valencia Departamento de Biología y Zoología, Universidad de Valencia Servicio Nacional de Pesca Fluvial y Caza
Sri Lanka	Department of Wildlife Conservation Wildlife Protection Society of Ceylon
Sudan	University of Khartoum
Sweden	Naturhistoriska riksmuseet Nordiska Museet and Skansen, Zoologiska Aulningarna Royal Swedish Academy of Sciences Statens Naturvårdsverk Svenska Jägarförbundet Svenska Naturskyddsöreningen Swedish Forest Service
Switzerland	Comité Central du Club Alpin Suisse Nos Oiseaux Schweizerische Naturforschende Gesellschaft Schweizerische Stiftung für Alpine Forschungen Schweizerischer Bund für Naturschutz
Taiwan	Tourism Bureau
Tanzania	Natural Resources and Utilization Division, Ministry of Agriculture, Food and Cooperatives Tanzania National Parks Association for the Conservation of Wildlife Forestry Division of the Ministry of Agriculture, Lands and Fisheries
Thailand	
Trinidad and Tobago	
Tunisia	Association Tunisienne pour la Protection de la Nature et de l'Environnement
Turkey	Ministry of Forests Société Turque pour la Protection de la Nature
Uganda	Game Department Uganda National Parks
Union of Soviet Socialist Republics	All-Russian Society for Conservation of Nature General Department on Nature Conservation, Reserves and Wildlife Management, Ministry of Agriculture
United Kingdom	British Museum (Natural History) British Ornithologists' Union Conservation Society Council for Nature Field Studies Council Pheasant Trust

**United States
of America**

Royal Society for the Protection of Birds
Society for the Promotion of Nature Reserves
Wildfowl Trust
World Wildlife Fund (British National Appeal)
Zoological Society of London
African Wildlife Leadership Foundation
American Committee for International Wild Life Protection, Inc.
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
Bernice P. Bishop Museum
Boone and Crockett Club
California Academy of Sciences
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.
Forest Service, United States Department of Agriculture
Foresta Institute for Ocean and Mountain Studies
Friends of the Earth
Garden Club of America
Institute of Natural Resources, University of Georgia
Island Resources Foundation, Inc.
Janss Foundation
L. S. B. Leakey 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
Natural Area Council, Inc.
Natural Resources Council of America
Nature Conservancy
New York Zoological Society
North American Wildlife Foundation
Pacific Tropical Botanical Garden
Portland Zoological Gardens
Research Ranch, Inc.
Save-the-Redwoods League
School of Natural Resources, University of Michigan
Sierra Club
Smithsonian Institution
Soil Conservation Society of America
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	Asociación Nacional para la Defensa de la Naturaleza
	Instituto para la Conservacion del Lago de Valencia
Yugoslavia	Association de la Conservation de la Nature de Yougoslavie
Zambia	Wild Life Conservation Society of Zambia

International Members *

American Association of Zoological Parks and Aquariums (USA)
 Association of Zoo Directors of Australia and New Zealand (Australia)
 Caribbean Conservation Association (US Virgin Islands)
 Commission des Réserves Naturelles du Groupement Européen des
 Ardennes et de l'Eifel (Belgium)
 Commission Internationale pour la Protection des Régions Alpines
 (Switzerland)
 Fauna Preservation Society (UK)
 Instituto Interamericano de Ciencias Agrícolas de la OEA (Costa Rica)
 International Association of Game, Fish and Conservation Commis-
 sioners (USA)
 International Biological Programme (UK)
 International Council for Bird Preservation (UK)
 International Council of Environmental Law (Germany, Fed. Rep. of)
 International Federation of Landscape Architects (Portugal)
 International Primatological Society (USA)
 International Union of Directors of Zoological Gardens (UK)
 International Youth Federation for Environmental Studies and Con-
 servation (Switzerland)
 Pacific Science Association (USA)
 Union Ibérica de Zoos (Spain)
 Union Internationale des Associations d'Alpinisme (Switzerland)

* Countries within parenthesis indicate location of headquarters

APPENDIX B

Membership of Executive Board and Commissions as at December 1972

<i>President:</i>	Professor D. J. Kuenen, Netherlands
<i>Vice-Presidents:</i>	Professor A. G. Bannikov, USSR Dr. I. McT. Cowan, Canada Mr. Zafar Futehally, India Dr. Christian Jouanin, France Dr. David P. S. Wasawo, Kenya
<i>Members:</i>	Mr. B. Dioum, Sénégal Mr. Eskandar Firouz, Iran Professor Ulf Hafsten, Norway Dr. A. Inozemtsev, USSR Professor M. Kassas, Egypt Ing. E. Mondolfi, Venezuela Professor M. F. Mörzer Bruyns, Netherlands Dr. Paulo Nogueira-Neto, Brazil Dr. M. E. D. Poore, UK Professor Olivier Reverdin, Switzerland Professor Otto Soemarwoto, Indonesia Lic. G. Stutzin, Chile Dr. Lee M. Talbot, USA Dr. José A. Valverde, Spain Dr. Gilbert F. White, USA

The Chairmen and Vice-Chairmen of the Commissions are consultants to the Executive Board, without voting rights.

Representatives of International Organizations with which the Union has working relationships are also a part of the Executive Board as observers without voting rights.

<i>Representatives of International Organizations:</i>	Council of Europe - Mr. Jean-Pierre Ribaut Food and Agriculture Organization - Mr. R. G. Fontaine International Association on Water Pollution Research - Professor O. Jaag International Council for Bird Preservation - Miss Phyllis Barclay-Smith International Council of Scientific Unions - Mr. F. W. G. Baker International Geographical Union - Professor H. Boesch International Secretariat for Volunteer Services - to be appointed International Social Science Council - Professor Jean-Paul Trystram International Society for the Protection of Animals - Mr. Colin Platt International Youth Federation - Mr. George H. M. Bechet Organization of African Unity - to be appointed Organization of American States - Mr. Kirk P. Rodgers UNESCO - Mr. M. Batisse United Nations Environment Programme - to be appointed UNIDO - to be appointed WHO - to be appointed WMO - Mr. C. M. Taylor WWF - Dr. L. Hoffmann
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Commission on Ecology

<i>Chairman:</i>	Professor F. Bourlière, France
<i>Vice-Chairmen:</i>	Mr. John S. Gottschalk, USA Professor J. D. Ovington, Australia
<i>Members:</i>	Professor P. Aguesse, France Professor Jean G. Baer, Switzerland Professor W. B. Banage, Uganda

Dr. A. B. Costin, Australia
 Professor J. B. Cragg, Canada
 Dr. José C. de Meio Carvalho, Brazil
 Professor W. A. Fuller, Canada
 Professor Olov Hedberg, Sweden
 Dr. L. Hoffmann, Switzerland
 Dr. Dale W. Jenkins, USA
 Professor Tatuo Kira, Japan
 Dr. H. F. Lamprey, UK
 Dr. Robert M. Linn, USA
 Dr. R. H. Lowe-McConnell, UK
 Professor Hans Luther, Finland
 Dr. Ernesto Medina, Venezuela
 Professor R. Misra, India
 Dr. M. Numata, Japan
 Professor K. F. O'Connor, New Zealand
 Professor George A. Petrides, USA
 Professor Nicholas Polunin, UK - Switzerland
 Dr. P. W. Richards, UK
 Dr. Bernard Salvat, France
 Professor Harald Sioli, Federal Republic of Germany
 Professor F. E. Wielgolaski, Norway
Consultants: Professor G. Hempel, Federal Republic of Germany
 Professor Kh. P. Mirimanian, Armenian SSR
 Professor G. Carleton Ray, USA
Representatives: Council of Europe - Mr. Jean-Pierre Ribaut
 Food and Agriculture Organization - to be appointed
 International Association for Ecology - Professor M. Lindauer
 International Biological Programme - Dr. E. B. Worthington
 Scientific Committee on Problems of the Environment - Mr. H. A. W. Southon
 The Institute of Ecology - to be appointed
 International Geographical Union - Professor H. Boesch
 UNESCO - to be appointed

Commission on Education

Chairman: Dr. L. K. Shaposhnikov, USSR
Vice-Chairmen: Dr. T. Pritchard, UK
 Mr. Lars-Erik Esping, Sweden
Members: Mr. James L. Aldrich, USA
 Dr. Dieter Burckhardt, Switzerland
 Dr. J.-P. Doets, Netherlands
 Dr. W. Erz, Federal Republic of Germany
 Dr. Vladimir M. Galushin, USSR
 Professor V. Giacomini, Italy
 Ing. Ricardo Gondelles A., Venezuela
 Ing. J. Goudswaard, Netherlands
 Professor M. Hyder, Kenya
 Dr. Hiroharu Indoh, Japan
 Mr. E. J. Kesteloot, Belgium
 Dr. Ricardo Luti, Argentina
 Dr. Michel Maldague, Canada
 Dr. Richard G. Miller, USA
 Professor S. C. Pandeya, India
 Professor Paul B. Park, Canada
 Dr. T. M. Szczesny, Poland
 Professor I. D. Zverev, USSR
Consultants: Professor A. Eichler, Venezuela
 Professor Denys Morgan, Zambia
 Professor V. A. Popov, USSR
 Professor N. Söyrinki, Finland

Representatives: Council of Europe - Mr. Jean-Pierre Ribaut
Food and Agriculture Organization - to be appointed
International Youth Federation - Mr. David Withrington
UNESCO - to be appointed

Commission on Environmental Planning

Chairman: Professor H. Boesch, Switzerland
Vice-chairmen: Mr. R. J. Benthem, Netherlands*
Mr. V. C. Robertson, UK
Members: Mr. E. N. Akah, Nigeria
Mr. G. L. Anagnostopoulos, Greece
Dr. Diego Arria, Venezuela
Mr. Fernando M. Chacel, Brazil
Mr. Gaston Damiean, Belgium
Mr. René Devred, Belgium
Dr. R. G. Downes, Australia
Professor Brian Hackett, UK
Professor W. Douglas Harper, Canada
Professor V. A. Kovda, USSR
Professor W. Manshard, Federal Republic of Germany
Dr. M. Makagiansar, Indonesia
Mr. John P. Milton, USA
Professor D. Ogrin, Yugoslavia
Professor Gerhard Olschowy, Federal Republic of Germany
Professor Peter H. Pearse, Canada
Mr. Norberto Sanchez-Mejorada, Mexico
Professor Ralph O. Slatyer, Australia
Professor V. Vanicek, Czechoslovakia
Consultants: Dr. C. K. Varshney, India
Miss Sylvia Crowe, C. B. E., UK
Professor D. R. Denman, UK
Mr. Dewar W. Goode, Australia
Mr. Gert Kragh, Federal Republic of Germany
Mrs. Joyce Lyndon, USA
Dr. Joseph A. Tosi, Jr., Costa Rica
Representatives: Council of Europe - Mr. Jean-Pierre Ribaut
Food and Agriculture Organization - to be appointed
International Federation of Landscape Architects - to be appointed
UNESCO - to be appointed

* Chairman, Committee on Landscape Planning

Commission on Environmental Policy, Law and Administration

Chairman: Professor Lynton K. Caldwell, USA
Vice-Chairmen: Mr. B. N. Bogdanov, USSR
Mr. W. E. Burhenne, Federal Republic of Germany*
Members: Dr. A. O. Adede, Kenya
Mr. Christian de Laet, Canada
Professor Richard N. Gardner, USA
Sir Robert Jackson, UK
Dr. O. Kolbasov, USSR
Professor Jaro Mayda, USA
Professor Eckard Reh binder, Federal Republic of Germany
Professor Kauko Sipponen, Finland
Professor A. R. Thompson, Canada
Mr. A. E. G. Trollip, South Africa
Professor Albert E. Utton, USA

Consultants: Professor Waclaw Brzezinski, Poland
 Professor Michel Despax, France
 Mr. Cyril de Klemm, France
 Dr. Nagendra Singh, India
 Mr. Digvijay Sinh, India
 Mr. Charles Vander Elst, Belgium
 Mrs. A. N. Wilson, USA

Representative: Council of Europe - Mr. Jean-Pierre Ribaut

*Chairman, Committee on Environmental Law

International Commission on National Parks

Chairman: Mr. John I. Nicol, Canada

Vice-Chairmen: Professor Th. Monod, France
 Mr. Theodor R. Swem, USA

Members: Mr. E. O. A. Asibey, Ghana
 Mr. Zekai Bayer, Turkey
 Ing. Mario A. Boza, Costa Rica
 Mr. Kai Curry-Lindahl, Sweden
 Dr. Marc J. Dourojeanni, Peru
 Dr. W. J. Eggeling, Scotland
 Professor Jean-Paul Harroy, Belgium
 Mr. Hanno Henke, Federal Republic of Germany
 Dr. V. V. Krinitskii, USSR
 Mr. P. H. C. Lucas, New Zealand
 Ing. Agr. Alceo Magnanini, Brazil
 Dr. D. F. McMichael, Australia
 Professor Peitsa Mikola, Finland
 Dr. Kenton R. Miller, USA
 Mr. P. M. Olindo, Kenya
 Professor Subhi Qasem, Jordan
 Mr. Tetsumaro Senge, Japan

Consultants: Mr. R. Knobel, South Africa
 Mr. E. M. Nicholson, UK
 Mr. Fred M. Packard, USA
 Mr. M. van der Goes van Naters, Netherlands

Representatives: Council of Europe - Mr. Jean-Pierre Ribaut
 Food and Agriculture Organization - to be appointed
 UNESCO - to be appointed

Survival Service Commission

Chairman: Sir Peter Scott, UK

Vice-Chairmen: Professor Jean Dorst, France

Members: Mr. M. K. Ranjitsinh, India (Himalayan Group)
 Professor A. G. Bannikov, USSR (Wild Horses)
 Lt. Col. C. L. Boyle, UK (Consultant)
 Professor Archie Carr, USA (Marine Turtles)
 Mr. Harold J. Coolidge, USA (Consultant)
 Dr. I. McT. Cowan, Canada (Deer)
 Mr. M. C. Downes, Papua New Guinea (Birds of Paradise)
 Mr. R. S. R. Fitter, UK (Alert Group)
 Major I. R. Grimwood, UK (Consultant)
 Professor T. Harrisson, UK (Alert Group)
 Professor Wolf Herre, (Vicuna)
 Federal Republic of Germany
 Mr. Rend E. Honegger, Switzerland (Reptiles & Amphibians)

Mr. Peter F. Hunt, UK	(Orchids)
Dr. M. P. Kahl, USA	(Flamingos)
Mr. Karl W. Kenyon, USA	(Seals)
Dr. F. Wayne King, USA	(Crocodiles)
Dr. Hans Kummer, Switzerland	(Primates)
Dr. Fred Kurt, Switzerland	(Consultant)
Dr. Anne LaBastille, USA	(Consultant)
Professor Paul Leyhausen, Federal Republic of Germany	(Cats)
Mr. Charles A. Lindbergh, USA	(Consultant)
Dr. Ronald Melville, UK	(Angiosperms)
Dr. Robert R. Miller, USA	(Freshwater Fish)
Professor Masaharu Nishiwaki, Japan	(Whales)
Mr. John Perry, USA	(Alert Group)
Dr. J. J. Pettey, France	(Madagascar)
Dr. Pierre Pfeffer, France	(Kouprey)
Professor Douglas H. Pimlott, Canada	(Wolves)
Mr. T. J. Roberts, Pakistan	(Bustards)
Mr. H. B. Rycroft, South Africa	(Consultant)
Dr. George B. Schaller, USA	(Consultant)
Dr. John S. Tener, Canada	(Polar Bears)
Col. Jack Vincent, South Africa	(Threatened Birds)
Professor W. H. Wagner, Jr., USA	(Pteridophyta)
Dr. Lawrence Walkinshaw, USA	(Cranes)
Mr. Philip Wayre, UK	(Pheasants)
<i>To be appointed</i>	(Rhinos)
<i>To be appointed</i>	(Birds of Prey)

*Corresponding
Members:*

Mr. J. B. Alvarez, Jr., Philippines
 Mr. E. O. A. Asibey, Ghana
 Col. Hla Aung, Burma
 Dr. F. C. Lehmann, Colombia
 Professor Eustorgio Mendez, Panama
 Professor R. Paulian, France
 Mr. Qassim Bin Hamad Al-Thani, Qatar
 Mr. P. D. Stracey, India (Ethiopia)
 Mr. Walter Van den Bergh, Belgium
 Dr. J. Verschuren, Zaïre

Representatives:

Professor Pyong-Oh Won, Korea
 Conseil International de la Chasse - to be appointed
 Council of Europe - Mr. Jean-Pierre Ribaut
 Food and Agriculture Organization - to be appointed
 Fauna Preservation Society - Mrs. A. M. S. Fitter
 Frankfurt Zoological Society - Professor B. Grzimek
 International Council on Bird Preservation - Miss Phyllis Barclay-Smith
 International Society for the Protection of Animals - Mr. Colin Platt
 International Union of Directors of Zoological Gardens - to be appointed
 International Zoo Yearbook - Mrs. Nicole Duplaix-Hall
 Netherlands International Commission for Nature Protection -
 Dr. J. H. Westermann
 New York Zoological Society - Mr. William G. Conway
 UNESCO - to be appointed
 Office of Endangered Species, U.S. Department of the Interior -
 Mr. Keith Schreiner
 World Wildlife Fund - Dr. Hartmut Jungius

IUCN Representative at United Nations

Representative: Professor Richard N. Gardner, USA
Assistant: Mr. Robert J. Gruszka, USA

APPENDIX C

Membership of Executive Board and Commissions, as dissolved at the General Assembly, September 1972

<i>President:</i>	Mr. Harold J. Coolidge, USA
<i>Vice-Presidents:</i>	Dr. I. McT. Cowan, Canada Sir Frank Fraser Darling, UK Mr. Zafar Futehally, India Dr. Christian Jouanin, France Professor M. F. Mörzer Bruyns, Netherlands
<i>Members:</i>	Mr. B. N. Bogdanov, USSR Ing. Agr. I. N. Costantino, Argentina Mr. B. Dioura, Sénégal Professor Ulf Hafsten, Norway Professor V. A. Kovda, USSR Dr. A. Medwecka Kornas, Poland Dr. Paulo Nogueira-Neto, Brazil Dr. M. E. D. Poore, UK Professor Olivier Reverdin, Switzerland Dr. Lee M. Talbot, USA Mr. Russell E. Train, USA Dr. José A. Valverde, Spain

Commission on Ecology

<i>Chairman:</i>	Professor D. J. Kuenen, Netherlands*
<i>Vice-Chairman:</i>	Professor J. D. Ovington, Australia
<i>Members:</i>	Dr. J. Berry, Scotland Professor F. Bourlière, France Dr. H. K. Buechner, USA Professor A. de Vos, Canada Professor W. A. Fuller, Canada Professor J. L. George, USA Mr. John S. Gottschalk, USA Professor Olov Hedberg, Sweden Professor G. Hempel, Federal Republic of Germany Dr. L. Hoffmann, Switzerland/France Professor H. Löffler, Austria Professor Hans Luther, Finland Professor Kh. P. Mirimanian, USSR Professor R. Misra, India Dr. M. Numata, Japan Professor Nicholas Polunin, UK/Switzerland Mr. T. Riney, USA Professor Harald Sioli, Federal Republic of Germany Professor F. E. Wielgolaski, Norway

•Replaced Professor J. B. Cragg who resigned late in 1971 because of illness.

Commission on Education

<i>Chairman:</i>	Dr. L. K. Shaposhnikov, USSR
<i>Vice-Chairman:</i>	Dr. T. Pritchard, UK
<i>Members:</i>	Mr. James L. Aldrich, USA Dr. J.-P. Doets, Netherlands

Dr. S. Doraiswami, India
Professor Arturo Eichler, Venezuela
Dr. W. Erz, Federal Republic of Germany
Mr. Lars-Erik Esping, Sweden
Dr. Vladimir M. Galushin, USSR
Ing. J. Goudswaard, Netherlands
Professor O. A. Høeg, Norway
Mr. Jonathan Holliman, UK
Mr. R. C. Kaushik, India
Mr. E. J. Kesteloot, Belgium
Dr. Ricardo Luti, Argentina
Dr. A. Magnanini, Brazil
Professor Michel Maldague, Canada
Professor Richard G. Miller, USA
Professor R. Misra, India
Professor Denys Morgan, Zambia
Professor Mario Pavan, Italy
Professor V. A. Popov, USSR
Professor G. S. Puri, UK
Professor A. K. Rustamov, USSR
Dr. Jukuchi Shimoizumi, Japan
Professor N. Söyrinki, Finland
Dr. T. M. Szczesny, Poland
Dr. R. C. Tarumingkeng, Indonesia
Dr. Hugo Weinitschke, German Democratic Republic

Commission on Environmental Planning

Chairman: Mr. R. J. Benthem, Netherlands
Vice-Chairman: Mr. Dewar W. Goode, Australia
Members: Mr. E. N. Akah, Nigeria
Mr. G. L. Anagnostopoulos, Greece
Mr. Egon Barnard, Federal Republic of Germany
Professor P. B. Bhagwat, India
Professor Lynton K. Caldwell, USA
Mr. Fernando M. Chacel, Brazil
Mr. S. Challenger, New Zealand
Miss Sylvia Crowe, UK
Professor Arturo Eichler, Venezuela
Professor Brian Hackett, UK
Professor W. Douglas Harper, Canada
Professor Charles W. Harris, USA
Dr. Theo Hunziker, Switzerland
Mr. Gert Kragh, Federal Republic of Germany
Professor V. A. Kovda, USSR
Professor Chung-Myun Lee, Republic of Korea
Mrs. Joyce Lyndon, USA
Professor Ian L. McHarg, USA
Dr. L. V. Motorina, USSR
Professor D. Ogrin, Yugoslavia
Professor G. Bernhard Olschowy, Federal Republic of Germany
Mr. Soo Hai Tan, Malaysia
Professor V. Vanicek, Czechoslovakia
Mr. C. J. Vyle, UK

Commission on Environmental Policy, Law and Administration

Chairman: Professor Lynton K. Caldwell
Vice-Chairman: Mr. W. E. Burhenne

POLICY AND ADMINISTRATION

Professor Lynton K. Caldwell, USA
Mr. Christian de Laet, Canada
Professor Richard N. Gardner, USA
Professor Jaro Mayda, USA
Professor Kauki Sipponen, Finland

LAW

Chairman of Committee on Environmental Law: Mr. W. E. Burhenne
Vice-Chairman of Committee on Environmental Law: Mr. Homer Angelo
Mr. Homer Angelo, USA
Mr. Malcolm Baldwin, USA
Professor Waclaw Brzezinski, Poland
Mr. W. E. Burhenne, Federal Republic of Germany
Mr. V. A. Chichvarin, USSR
Mr. Cyril de Klemm, France
Mr. Michel Despax, France
Mr. B. Dioum, Senegal
Mr. J. E. S. Fawcett, UK
Professor Osamu Ikenouye, Japan
Mr. Geoffrey Alexander Kennedy, Australia
Dr. O. Kolbasov, USSR
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. E. G. Trollip, South Africa
Mr. Charles Vander Elst, Belgium
Mrs. A. N. Wilson, USA
Mr. F. B. Zenny, Italy

International Commission on National Parks

Chairman: Professor Jean-Paul Harroy
Vice-Chairmen: Ing. Agr. I. N. Costantino, Argentina
Mr. Kai Curry-Lindahl, Sweden
Members: Mr. Horace M. Albright, USA*
Mr. H. Basjarudin, Indonesia
Mr. Zekai Bayer, Turkey
Mr. Alphonse Biwela, Zaïre
Mr. R. W. Cleland, New Zealand
Dr. W. J. Eggeling, UK
Professor W. Goetel, Poland
Professor V. G. Heptner, USSR
Mr. R. Knobel, South Africa
Mr. P. H. C. Lucas, New Zealand
Dr. D. F. McMichael, Australia
Dr. Kenton R. Miller, USA
Professor Th. Monod, France
Mr. E. M. Nicholson, UK
Mr. John I. Nicol, Canada
Mr. P. M. Olindo, Kenya
Mr. Fred M. Packard, USA
Professor Valeriu Puscariu, Rumania
Mr. Georges Ramanantsoavina, Madagascar
Ing. Pablo Rosero, Ecuador
Mr. Tetsumaro Senge, Japan
Mr. H. E. Strang, Brazil

Mr. Theodor R. Swem, USA
Dr. Tsuyoshi Tamura, Japan*
Mr. M. van der Goes van Naters, Netherlands
Mr. Conrad L. Wirth, USA

* Honorary Members

Survival Service Commission

Chairman: Mr. Peter Scott
Vice-Chairmen: Mr. Kai Curry-Lindahl, Sweden
Professor Jean 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
Professor A. G. Bannikov, USSR (Wild Horse*)
Miss Phyllis Barclay-Smith, UK
Mr. H. Basjarudin, Indonesia
Mr. J. Boswall, UK
Lt. Col. C. L. Boyle, UK
Mr. J. H. Calaby, Australia (Marsupial*)
Professor Archie Carr, USA (Marine Turtle*)
Mr. William G. Conway, USA
Dr. H. B. Cott, UK (Crocodile*)
Dr. I. McT. Cowan, Canada
Col. M. H. Cowie, Kenya
Earl of Cranbrook, UK
Dr. J. A. Crespo, Argentina
Mr. P. K. Crowe, USA
Mrs. Nicole D. Duplaix-Hall, UK
Mr. H. M. van Deusen, USA
Mr. R. S. R. Fitter, UK
Mrs. M. S. Fitter, UK
Major I. R. Grimwood, UK
Professor B. Grzimek, Federal Republic of Germany
Mrs. B. Harrison, USA
Professor T. Harrison, UK (Orang-utan*)
Professor V. G. Heptner, USSR
Professor Wolf Herre, Federal Republic of Germany (Vicuna*)
Mr. René Honegger, Switzerland
Mr. Peter F. Hunt, UK (Orchid*)
Dr. J. A. Ibarra, Guatemala
Mr. Karl W. Kenyon, USA (Seal*)
Major B. G. Kinloch, Malawi
Professor D. J. Kuenen, Netherlands
Dr. Fred Kurt, Switzerland
Dr. Anne LaBastille, USA
Dr. E. M. Lang, Switzerland
Professor Paul Leyhausen, Federal Republic of Germany
Mr. Charles A. Lindbergh, USA
Mr. J. Lucas, UK
Ir. C. H. J. Maliepaard, Netherlands
Dr. Ronald Melville, UK
Dr. Eustorgio Mendez, Panama
Professor R. G. Miller, USA
Dr. Robert R. Miller, USA (Freshwater Fish*)
Professor Masaharu Nishiwaki, Japan (Whales*)
Professor R. Paulian, France
Mr. John Perry, USA (Zoo Group*)
Dr. R. T. Peterson, USA

Dr. J.-J. Petter, France (Madagascar*)
Dr. Pierre Pfeffer, France
Professor Douglas H. Pimlott, Canada (Wolf*)
Dr. S. S. du Plessis, South Africa
Mr. Qassim Bin Hamad Al-Thani, Qatar (Arabian Oryx*)
Mr. M. K. Ranjitsinh, India (Himalayan Group*)
Mr. C. G. C. Rawlins, UK
Professor H. Roth, FAO (Rhinoceros*)
Dr. George B. Schaller, USA
Mr. N. M. Simon, UK
Professor D. Starck, Federal Republic of Germany (Primate*)
Mr. P. D. Stracey, Ethiopia
Dr. John S. Tener, Canada
Mr. Walter van den Bergh, Belgium
Mr. Charles Vander Elst, Belgium
Col. Jack Vincent, South Africa
Dr. W. H. Wagner, Jr., USA
Dr. Lawrence H. Walkinshaw, USA
Dr. R. E. Warner, Canada
Dr. J. H. Westermann, Netherlands
Mr. G. K. Whitehead, UK (Deer*)
Professor Pyong-Oh Won, Korea
Dr. J. Zabinski, Poland (European Bison*)

* Specialist Group chaired by the Member

APPENDIX D

Committees, Working Groups and Task Forces as of 31 December 1972

Committee on the Improvement of Cultural Landscapes (Environmental Planning)

Chairman: Professor Dr. V. Vanicek, Czechoslovakia

Vice-Chairman: Dr. J. Braun, Poland

Coordinator: Mg. J. Wiltowski, Poland

Members: Dr. J. Bogdanowski, Poland

Dr. D. Colic, Yugoslavia

Dr. J. Drdos, Czechoslovakia

Professor E. Hadac, Czechoslovakia

Professor V. Ionescu-Sisesti, Rumania

Professor M. Möcsényi, Hungary

Ing. Z. Radovanovic, Yugoslavia

Dr. S. Stajic, Yugoslavia

Professor M. Twarowski, Poland

Professor K. Zabierowski, Poland

Executive Officer: Mr. A. H. Hoffmann, Switzerland

North-West Europe Committee (Education Commission)

Chairman: Professor O. A. Høeg, Norway

Vice-Chairman: Dr. J.-P. Doets, Netherlands

Secretary: Mr. Philip H. Oswald, UK

Members: Professor E. Bjorkman, Sweden

Professor T. W. Bocher, Denmark

Mr. R. E. Boote, UK

Dr. E. Einarsson, Iceland

Mr. Lars-Erik Esping, Sweden

Ing. J. Goudswaard, Netherlands

Professor Ulf Hafsten, Norway

Mrs. A. von Hofsten, Sweden

Dr. S. Huse, Norway

Mr. E. J. Kesteloot, Belgium

Dr. F. Lauritzen, Denmark

Dr. H. Lohmeyer, Federal Republic of Germany

Mrs. H. Lohmeyer, Federal Republic of Germany

Mr. A. W. Martinsen, Norway

Professor W. Pflug, Federal Republic of Germany

Dr. T. Pritchard, UK

Mr. D. Ruting, Netherlands

Professor N. Söyrinki, Finland

Mr. F. Wattier, Belgium

East-Europe Committee (Education Commission)

Chairman: Dr. M. Szczesny, Poland

Vice-Chairmen: Professor M. A. Voinstvenskij, Ukrainian S.S.R.

Mr. Hans Schotte, German Democratic Republic

Members: Professor L. Bauer, German Democratic Republic

Dr. D. Colic, Yugoslavia

Ing. Jan Dziedzic, Poland

Dr. Jadwiga Gawlowska, Poland

Professor N. A. Gladkov, U.S.S.R.

Ing. Milan Hirs, Czechoslovakia

Dr. Istvanné Karpati, Hungary

Mrs. Karoliné Kotun, Hungary

Professor Dana Kvasnickova, Czechoslovakia (replacing Mrs. Ing. M. Lexova during her absence from Czechoslovakia)
Professor Kh. P. Mirimanian, Armenian S.S.R.
Professor Valeriu Puscariu, Rumania
Professor S. Stojic, Yugoslavia
Dr. N. Toniuc, Rumania
Ing. M. K. Toshkov, Bulgaria
Dr. A. Vins, Czechoslovakia
(replacing Dr. J. Cerovsky during his absence from Czechoslovakia)
Dr. H. Weinitschke, German Democratic Republic

Task Forces and Working Groups

Jaguar and ocelot - Leopard and cheetah - Sumatran rhino

Dr. Carl B. Koford, USA
Mr. Norman Myers, Kenya
Dr. Fred Kurt, Switzerland

Islands Working Group

Representative of UNESCO - to be appointed
Mr. Harold J. Coolidge, USA
Dr. Raymond F. Dasmann, IUCN
Sir Hugh F. I. Elliott, Bart., IUCN
Dr. Christian Jouanan, France
Mr. E. M. Nicholson, UK
Dr. Lee M. Talbot, USA

Selection Panel for the UN List of National Parks and Equivalent Reserves

Chairman: Mr. J. I. Nicol, Canada
Members: Mr. Kai Curry-Lindahl, Sweden
Dr. Raymond F. Dasmann, IUCN
Professor Jean-Paul Harroy, Belgium
Mr. P. H. C. Lucas, New Zealand
Dr. Kenton R. Miller, USA

Working Group on Conservation in Greece

Chairman: Dr. L. Hoffmann, Switzerland
Members: Mr. W. Bauer, Federal Republic of Germany
Mr. G. Müller, Federal Republic of Germany
Dr. H.-J. Böhr, Federal Republic of Germany
Mr. E. Carp, UK
Mr. J.-F. Terrasse, France
Mr. Byron Antipas, Greece

Working Group on Conservation in Indonesia

Dr. Fred Kurt, Switzerland
Professor R. Schenkel, Switzerland
Professor Otto Soemarwoto, Indonesia
Dr. J. H. Westermann, Netherlands

Toxic Chemicals Task Force

Dr. N. W. Moore, UK
Mr. A. Dunbavin Butcher, Australia

Wetlands Working Group

Representative of FAO - to be appointed
IBP - Miss Gina Douglas, Scientific Coordinator, IBP/CT
Mr. E. M. Nicholson, IBP/CT Convener
Dr. T. Pritchard, Convener of Project TELMA

Dr. J. Rzoska, Scientific Coordinator, IBP/PF
Dr. E. B. Worthington, Scientific Director, IBP
ICBP - Miss P. Barclay-Smith, Secretary (UK) ICBP
Professor M. F. Mörzer Bruyns
IUCN - Mr. Frank G. Nicholls, Deputy Director General, IUCN
Sir Hugh F. I. Elliott, Bart., IUCN
IWRB - Dr. L. Hoffmann, Coordinator, IWRB Mediterranean Branch
Professor G. V. T. Matthews, Director, IWRB
SIL - Professor Hans Luther, SIL National Representative for Finland
Dr. E. B. Worthington
Representative of UNESCO - to be appointed

"Post-Stockholm Conference" Task Force

Chairman: Mr. Christian de Laet, Canada
Members: Mr. Peter Ellyard, Australia
Mr. Robert J. Gruszka, USA
Mr. Scott MacLeod, USA
Mr. Robert Munro, Canada
Mrs. Shadia Schneider-Sawiris, Egypt/Federal Republic of Germany

Survival Service Commission, Specialist Groups

Orchid Group

Chairman: Mr. Peter F. Hunt, UK
Members: Mr. A. W. Dockrill, Australia
Mr. G. C. K. Dunsterville, Venezuela
Dr. A. Lawalree, Belgium
Dr. T. Smitinand, Thailand
Mr. N. Wisniewski, German Democratic Republic

Freshwater Fish Group

Chairman: Dr. Robert R. Miller, USA
Members: Dr. E. R. Alfred, Malaysia
Professor C. L. Hubbs, USA
Professor C. Kosswig, Turkey
Dr. A. G. K. Menon, India
Professor Th. Monod, France
Dr. Morizumu Nakamura, Japan
Professor C. Suvatti, Thailand
Professor A. N. Svetovidov, USSR
Dr. E. Trewavas, UK
Dr. Tyson Roberts, USA
Mr. Alwyne C. Wheeler, UK

Reptile/Amphibian Group

Co-ordinator: Mr. René E. Honegger, Switzerland
Members: Dr. E. R. Alfred, Malaysia
Dr. Arden H. Brame, Jr., USA/S. America
Dr. Donald G. Broadley, Rhodesia
Dr. Silvio Bruno, Italy - Mediterranean
Dr. R. Bruce Bury, USA
Dr. H. Robert Bustard, Australia
Mr. J. C. Daniel, India
Dr. F. Wayne King, USA
Mr. J. D. Romer, M. B. E., Hong Kong
Mr. Jaime D. Villa, Nicaragua

Crocodile Group

Chairman: Dr. F. Wayne King, USA
Secretary: Dr. H. Robert Bustard, Australia
Members: Mr. R. I. G. Attwell, Rhodesia

Dr. A. d'A. Bellairs, UK
Dr. Howard W. Campbell, USA
Dr. Robert H. Chabreck, USA
Dr. Hugh B. Cott, UK
Mr. J. S. Dobbs, USA
Mr. Max C. Downes, Papua and New Guinea
Mr. René E. Honegger, Switzerland
Professor F. Medem, Colombia
Mr. J. H. Powell, Jr., USA
Mr. T. Pooley, Zululand, South Africa
Mr. Luis S. Varona, Cuba
Mr. U. Yangprapakorn, Thailand

Marine Turtle Group

Chairman: Professor Archie Carr, USA
Vice-Chairman: Professor Tom Harrison, UK
Members: Dr. Peter R. Bacon, Trinidad and Tobago
Professor L. D. Brongersma, Netherlands
Dr. H. Robert Bustard, Australia
Dr. P. E. P. Deraniyagala, Sri Lanka
Mrs. Mary-Margaret Goodwin, USA
Professor John R. Hendrickson, USA
Dr. Harold F. Hirth, USA
Mr. George R. Hughes, South Africa
Dr. R. Kaufmann, Colombia
Mr. B. J. Lusty, UK
Biol. René Marquez, Mexico
Dr. P. C. H. Pritchard, USA
Dr. Joop P. Schulz, Surinam
Mr. G. S. de Silva, Malaysia
Mr. I. S. Suwelo, Indonesia
Mr. Tho Yow Pong, Malaysia
Dr. I. Uchida, Japan

Birds

The IUCN/SSC looks to the International Council for Bird Preservation with regard to conservation action relating to birds. The co-ordinators of their World Working Groups are members of SSC and, these, together with the ICBP representative, assure the essential liaison required. These Working Groups are as follows: Bustards, Birds of Prey, Cranes, Flamingoes, Pheasants, Birds of Paradise, and Bower Birds.

Cat Group (in formation)

Chairman: Professor Paul Leyhausen, Federal Republic of Germany
Secretary: Mr. Paul Joslin, UK

Deer Group (in formation)

Primate Group (in formation)

Chairman: Professor Hans Kummer, Switzerland

Polar Bear Group

Chairman: Mr. Thor Larsen, Norway
Members: Mr. James Brooks, USA
Dr. Charles Jonkel, Canada
Dr. A. A. Kistchinski, USSR
Mr. George Kolenosky, Canada
Mr. Jack W. Lentfer, USA
Mr. Magnar Norderhaug, Norway
Dr. John S. Tener, Canada
Dr. Savva M. Uspensky, USSR
Dr. Christian Vibe, Denmark

Rhino Group (in formation)

Seal Group

Chairman: Mr. Karl W. Kenyon, USA
Members: Dr. Anelio Aguayo L., Chile
Mr. W. N. Bonner, UK
Dr. A. W. Erickson, USA
Dr. Judith E. King, Australia
Dr. A. W. Mansfield, Canada
Professor M. Nishiwaki, Japan
Dr. Torger Øritsland, Norway
Dr. Keith Ronald, Canada
Dr. D. E. Sergeant, Canada
Dr. Raul Vaz Ferreira, Uruguay
Mr. R. M. Warneke, Australia

Vicuña Group

Chairman: Professor Wolf Herre, Federal Republic of Germany
Secretary: Dr. Hartmut Jungius, Switzerland
Members: Ing. Percy Baptista L., Bolivia
Ing. Flavio Bazan, USA
Dr. Armando G. Cardozo, Ecuador
Dr. Marc Dourojeanni, Peru
Mr. William L. Franklin, USA
Dr. Rudolf Hofmann, Peru
Ing. Carlos Ponce del Prado, Peru
Sr. Jürgen Rottmann S., Chile
Mr. Christian R. Schmidt, Switzerland

Wild Horse Group

Chairman: Professor A. G. Bannikov, USSR
Members: Miss D. Machin Goodall, UK
Professor D. Tsevegmid, Mongolia
Dr. Zdenek Veselovsky, Czechoslovakia
Dr. J. Volf, Czechoslovakia

Whale Group

Chairman: Professor Masaharu Nishiwaki, Japan
Members: Dr. Anelio Aguayo L., Chile
Mr. Peter Best, South Africa
Mr. Sidney G. Brown, UK
Professor D. G. Chapman, USA
Professor B. Dawbin, Australia
Dr. R. Gambell, UK
Dr. Sidney J. Holt, Malta
Dr. A. Jongsgaard, Norway
Mr. Charles A. Lindbergh, USA
Dr. N. A. Mackintosh, UK
Dr. S. Ohsumi, Japan
Mr. Dale W. Rice, USA
Dr. David E. Sergeant, Canada
Dr. Alexey B. Yablokov, USSR

Wolf Group

Chairman: Professor Douglas H. Pimlott, Canada
Members: Professor D. I. Bibikov, USSR
Dr. Nicolas Boev, Bulgaria
Professor B. Haglund, Sweden
Dr. L. David Mech, USA

Mr. Allan Murray, Canada
Dr. Svein Myrberget, Norway
Mrs. Jelena Popovic, Yugoslavia
Dr. E. Pullianen, Finland
Mr. R. A. Rausch, USA
Professor R. Schenkel, Switzerland
Dr. Piotr Suminski, Poland
Dr. Franco Tassi, Italy
Dr. José A. Valverde, Spain
Dr. B. Villa Ramirez, Mexico

Himalaya Group

Chairman:

Mr. M. K. Ranjitsinh, India
Mr. N. D. Bachketi, India
Dr. Robert L. Fleming, Jr., Nepal
Mr. K. L. Mehta, India
Colonel H. Nedou, India
Mr. T. J. Roberts, Pakistan
Mr. B. B. Srivastava, India
Mr. R. Wani, India

APPENDIX E

IUCN Secretariat, December 1972

<i>Director-General:</i>	Dr. Gerardo Budowski
<i>Deputy Director-General:</i>	Mr. Frank G. Nicholls
<i>Senior Ecologist:</i>	Dr. Raymond F. Dasmann
<i>Ecologists:</i>	Mr. Harry A. Goodwin Dr. Colin W. Holloway Dr. Patrick de Rham
<i>Executive Officer, Survival Service:</i>	Mr. S. E. Jorgensen (Volunteer)
<i>Executive Officer, Ecology:</i>	Miss Moira A. G. Warland
<i>Executive Officer, National Parks:</i>	Miss Mona Björklund
<i>Executive Officer, Education:</i>	Mrs. Paule Gryn-Ambroes
<i>Executive Officer, Environmental Planning:</i>	Dr. Jan Cerovsky
<i>Executive Officer, Policy, Law and Administration:</i>	Mr. Alfred Hoffmann
<i>Information Officer:</i>	Mr. Frank G. Nicholls (A.I.)
<i>Scientific Editor:</i>	Mr. Robert I. Standish
<i>Legal Officer:</i>	Sir Hugh F. I. Elliott, Bart.
<i>Finance Officer:</i>	Dr. Françoise Burhenne-Guilmin
<i>Administrative Officer:</i>	Mrs. K. M. I. Williams
<i>Science Writer:</i>	Mrs. Lenore Smith
<i>Librarian:</i>	Mr. Joseph Lucas
<i>Translator:</i>	Mr. Arnold Koenen
<i>Administrative Aide:</i>	Miss L. de Bonneval Mr. Herbert Girardet

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APPENDIX F

Monthly Bulletin

Volume 3, 12 issues, January through December, 1972

Supplements:

- January* Index to Volume 2
- February* Conclusions of the European Working Conference on Environmental Conservation Education (Rüschlikon, Switzerland)
- June* Declaration of Principles and Recommendations, First International Scientific Conference on Vicuña Conservation (Lima and Nazca, Peru)
- October* Geographical List, Amphibian and Reptile species appearing in the Red Data Book, Volume III
- November* Resolutions of the 11th General Assembly of IUCN (Banff, Canada)
- Recommendations, Second World Conference on National Parks (Grand Teton National Park, USA)

IUCN Publications, New Series

- No. 15A* Addendum - Corrigendum to the Second Edition of the UN List of National Parks and Equivalent Reserves
- No. 23* Bears - Their Biology and Management
Papers and Proceedings of International Conference on Bear Research and Management, University of Calgary, Alberta, November 1970.

Supplementary Papers

- No. 34* Environmental Conservation Education
Final Report of European Working Conference on Environmental Conservation Education, Rüschlikon, Switzerland, December 1971.
- No. 35* Polar Bears
Proceedings of 3rd working meeting of polar bear specialists, Morges, February 1972.
- No. 36* Comptes rendus de la Conference Internationale sur la Conservation de la Nature et de ses ressources a Madagascar. Tananarive, Madagascar, October 1970.

Environmental Law Papers

- No. 1* The Easement as a Conservation Technique
- No. 2* Standing to Sue in Environmental Litigation in the United States of America
- No. 3* German Law on Standing to Sue

IUCN Yearbook 1971

APPENDIX G

Statement of income and expenditure for the year ended December 31, 1972

expressed in Swiss Francs)

	Sfrs.	Sfrs.
INCOME		
Membership fees and subscriptions		380,994
Sale of publications		52,635
Interest on Deposits and Dividends		8,574
WWF Subvention and Earmarked Grants		667,452
Ford Foundation Grant		950,082
Unesco Subvention		38,400
Unesco Contracts		42,297
Miscellaneous Grants and Receipts		538,287
		<hr/> 2,678,721
ADD: Reserves brought to account in 1972		52,037
		<hr/> 2,730,758
LESS: Receipts transferred to Reserves in 1972		206,058
		<hr/> 2,524,700
TOTAL INCOME		
EXPENDITURE		
Personnel (incl. insurance and provident fund)		
Senior Scientific Staff	511,687	
Other Scientific Staff	871,029	
Auxiliary Staff	230,489	
Supporting Staff	318,718	
Temporary Staff	<u>69,278</u>	2,001,201
Accommodation		48,915
Office and other administrative expenses		176,926
Travel		94,391
Library and Legal Texts		13,060
Publications		119,819
Meetings		112,155
Purchase of furniture and equipment		8,663
Special Grants-Projects		198,219
IBM Computer Programme - Legislation		99,691
Devaluation and difference in exchange		789
		<hr/> 2,873,829
TOTAL EXPENDITURE		
Excess of income over expenditure to December 31, 1971		17,305
Excess of expenditure over income for the year		349,129
		<hr/> Excess of expenditure over income to December 31, 1972 represented by the
Assets less Liabilities on the statement attached		331,824

Statement of assets and liabilities at December 31, 1972

(expressed in Swiss Francs)

	Sfrs.
ASSETS	
Cash on hand and with bankers	236,992
Cash in transit	46,192
Prudential Building Association Certificate of Deposit - \$ 7,000	26,616
Prepaid Expenses	129,663
Debtors	35,545
Furniture and Installations	1
	<hr/> 475,009
TOTAL ASSETS	
LIABILITIES	
Earmarked contributions not yet expended - Schedule I	459,116
Creditors	347,717
	<hr/> 806,833
TOTAL LIABILITIES	
Excess of Liabilities over Assets	331,824

SCHEDULE I

Earmarked Reserves at December 31, 1972

(expressed in Swiss Francs)

	Sfrs.
Life Associate Fund	74,862
John C. Phillips Award	29,340
Red Data Books	134,463
Other Publications	13,305
Purchase of Microfiche Equipment	14,571
Unesco Contracts	5,496
Zoo Liaison Committee	6,572
Bunhal Marsh Investigation	306
Kouprey Project	33,468
Primate Coordination and Animal Trade Project	15,799
Establishment of a Quetzal Cloud Forest Reserve, Guatemala	1,152
Jaguar and Ocelot Survey Project	29,143
Ecological Guidelines for Development Planners	83,409
IUCN Documentation on Environmental Law	7,750
Import-Export Regulations designed to protect certain species of Wild Animals and Plants	6,520
Directory of Governmental Environmental Protection Agencies	1,981
Environmental Quality as a Political Concept	979
	459,116

Vu et approuvé - Fiduciaire Fernand et Philippe Guex, 2, rue de la Paix, 1003 Lausanne,
April 1973

APPENDIX H

The following extract from the Proceedings of the 11th General Assembly, Banff, Canada, 11-16 September 1972, appears on pages 13 and 14 of that document:

Report of Programme and Budget Committee

39. The Chairman of the Programme and Budget Committee, Dr. M. E. D. Poore, presented the Report of this Committee (see GA. 72/22). He commented initially on the proposal that membership fees be increased and referred to Agenda Paper GA. 72/6. His Committee, after discussion with delegates of governmental members (see also GA. 72/20), had proposed a draft resolution on this matter. In reply to a question from Mr. R. J. Maclachlan (New Zealand), the Deputy Director General stated that the proposed flat fee of \$100 for all agency members was in the nature of a service charge.

Resolution No. 387

The following resolution was passed unanimously:

Whereas the membership fees of non-governmental members have not been raised since the inception of IUCN in 1948;

And whereas the membership fees of State members were last examined in Lucerne in 1966, when adjustments were made designed to meet from membership fees about 50% of IUCN expenditure;

And whereas in 1972, due to devaluation of currency and increasing costs, present membership fees meet only 13% of the IUCN hard-core recurrent expenditure;

And whereas the direct costs of the routine services made available by IUCN to each member exceeds \$100 per annum;

The Eleventh General Assembly

Resolves:

1. That membership fees of national organization members be raised to a minimum of \$100 per annum with immediate effect;
2. That membership fees for international organization members be fixed at a minimum of \$100 per annum except where IUCN has reciprocal working arrangements with the body concerned;
3. That each non-governmental member be obliged to assess the extent to which its resources would enable it to pay a larger fee, and to pledge an appropriate sum;

4. That the amount of fees so pledged by each member organization be published by IUCN and that such amount be modifiable only at a subsequent General Assembly;

5. That new applicants for membership be required to make a similar assessment and pledge before their membership application is considered;

And further resolves:

That the membership fees of Affiliates be set at a minimum of \$50 per annum, and that they be subject to the requirements of self-assessment and pledging described above;

And further resolves:

1. That the present rates of membership fees for State members be raised to those in the following scale:

Group	Membership Fee
1	\$550
2	1,100
3	1,650
4	2,300
5	3,000
6	3,800
7	4,900
8	6,200
9	7,600
10	9,000

and that these rates become obligatory in 1975;

2. That in the meantime all State members be urged to adopt these new rates as soon as possible;

And further resolves:

1. That membership fees for all Agency members be set at a minimum of \$100 per annum with immediate effect;

2. That the membership fees for Agency members of the central government in countries that are not State members be increased so that the total fees for such agencies in any one country amount to one-third of the State membership fee applicable to that country, this to become effective at the General Assembly if then approved. In the meantime the Agency members concerned be urged to adopt these new rates as soon as possible.