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Text for Convention on Wetlands proposed by International Conference at Ramsar, Iran

Delegates from 18 nations in the presence of official observers from five others, as well as from FAO, UNESCO, CIC, ICBP, IUCN, IWRB, IBP and WWF, in February agreed on the text of a proposed Convention on Wetlands of International Importance Especially as Waterfowl Habitat.

The action, taken at the International Conference on the Conservation of Wetlands and Waterfowl, held at Ramsar, Iran, 30 January to 3 February, 1971, has been in the making for almost a decade.

In its Final Act, the Conference at Ramsar invited the Government of Iran to prepare translations of the text of the Convention and to arrange for the Convention to be opened for signature at a convenient date.

It is probable that the Convention will in fact be opened for signature before the end of 1971. It is also foreseen that additional signatures will be obtained at the U.N. Conference on the Human Environment to be held in Stockholm in 1972.

Text of the Final Act of the International Conference on the Conservation of Wetlands and Waterfowl, Ramsar, 1971, is published as a supplement in this issue of the IUCN Bulletin (Vol. 2, No. 19), together with the Final Text of the Convention on Wetlands of International Importance Especially as Waterfowl Habitat.

Under the proposed Convention, IUCN would perform the continuing bureau duties required. The proposed Convention is seen as a major step forward in international cooperation in the conservation of wetlands. It will ensure international action to safeguard a chain of wetlands to provide refuges for waterfowl in annual migrations. It will also focus attention on their exceptionally high intrinsic productivity, and the multiplicity of values non-marine wetlands have for science, ecological understanding and education, and many kinds of economic human recreation. On the other hand, for many reasons – including attempts to remove health hazards and annoyances, and the mounting pressure to open up flat and fertile land for cultivation – the number of wetland areas has sharply decreased, especially in the last 50 years. Remaining areas throughout the world are still under constant threat from drainage and pollution, which may be deliberately planned or arise incidentally from ill-considered peripheral development.

The attitudes represented in the threat to wetlands are so engrained, stemming as they do from the fears and limited aspirations of primitive man, that it requires the



THE SEYCHELLES MEDUSA TREE, *Medusagyne oppositifolia* Baker, which since 1962 has been presumed extinct, was rediscovered in 1970 by Mr. J. Proctor on the island of Mahé during a survey of potential reserve areas in the Seychelles. Five small trees were found on a granite escarpment. Few viable seeds appear to be produced so that the tree may be in decline from natural causes, which have been accelerated by disturbance of its habitat.

Photo: J. Proctor

The Conference was deeply impressed with the decision of H. I. M. Mohammad Reza Pahlavi that Iran would place one of its wetland ecosystems of special international importance in joint trust with a suitable international agency. The particular wetland would be managed for the benefit of all mankind. The Conference commended this most important precedent to other governments.

utmost effort on the part of IUCN, in collaboration with all organizations dedicated to an ecological approach to the world's problems, to secure a new outlook towards their management. There is no doubt that with proper planning and modern technical methods, their conservation for the multi-purpose uses indicated by the values enumerated above, is not only feasible but can be achieved in such a way as to ensure maximum satisfaction of human ecological requirements.

Proposals for a convention on wetlands have been discussed at a number of meetings during the past decade. The need for such a convention was felt in 1962 at the International Conference on Wetlands (the MAR Conference), organized jointly by IUCN, ICBP, IWRB. There, it was decided that IUCN should compile a list in accordance with an internationally agreed classification of European and North African wetlands of international importance, together with detailed information on these

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

A third formal draft of an international convention designed to regulate traffic in species of wild animals and plants threatened with extinction or approaching that condition has been referred to governments by IUCN with the view to concluding the Convention.

IUCN has long concerned itself, through its Survival Service Commission, with the conservation of threatened and declining species of wild animals and plants. The present project stems from recommendations made by SSC, and the earlier work of IUCN's former Commission on Legislation relating to the African Convention (Algiers 1968).

Following a resolution of the IUCN 8th General Assembly (Nairobi 1963), it was decided to prepare a draft of a convention relating to international traffic in threatened and declining species as a cooperative effort between the former Commission on Legislation and the Survival Service Commission.

A first formal draft was sent in September 1967 to 90 countries for comment. A second formal draft, modified in the light of the comments received, was sent to governments in August 1969.

The third formal draft was developed in the light of further comments received, and after discussions the Secretariat held with FAO, the Customs Cooperation Council, and the Scientific Committee on Antarctic Research, in collaboration with consultants. The text has been endorsed by the Survival Service Commission.

The Convention is designed to regulate traffic in threatened and declining species. Information gathered by various bodies throughout the world and correlated by the Survival Service Commission shows that a considerable number of wild animals and plants will become extinct unless urgent conservation action is taken. The principal reasons for this situation are over-exploitation of these populations and modification of their habitats.

The Convention is concerned with species threatened or declining because of over-exploitation, particularly those that enter international commerce. Two categories are distinguished: those species that are already threatened with world-wide extinction, and those which are approaching this condition.

Proposed regulation is primarily at the point of origin through the institution of export permits for both categories, with control to be exercised by the competent authority designated in the exporting country, which will limit the number of permits granted so as to avoid over-exploitation. In the case of threatened species, a further control is included by the pre-requisite of an import permit, issue of which is controlled by a scientific authority in the importing country and authorized only when adequately justified and then only for a scientific purpose. By the very nature of this category, it is not expected that a large number of permits will be issued.

The draft proposes that over-all supervision be undertaken by an International Advisory Committee appointed by representatives of the Contracting States.

Although border checks on permits at exit and entry are important elements in the regulatory mechanism, it is implicit that internal checks at various points in the marketing chain will also be involved. Much of the regulatory mechanism will presumably be the responsibility of the authority concerned with conservation in the country involved.

The present draft differs from the second of the earlier drafts in a major reorganization of its arrangement into articles to group related topics more effectively. The opportunity has been taken to effect other improvements in drafting, including points raised by various countries after examining the earlier draft.

The Swiss Government has formally agreed to act as

depository for the Convention and it is expected that IUCN will provide the Secretariat for the Advisory Committee to be established under the Convention.

The activities described in the foregoing article are all part of IUCN project No. 29-1.

Appendices of the Draft Convention follow:

APPENDIX I

Species threatened with world-wide extinction, the export, import and transit of which must be subject to particularly strict regulation in order to ensure their survival and only authorized in exceptional circumstances.

Fauna

Mammalia

All species of Indridae and
Daubentonidae
All species of *Cacajao*
Chiropotes albinus
Brachyteles arachnoides
Callimico goeldii
All species of *Leontideus*
Pongo pygmaeus
All species of *Pan*
Gorilla gorilla
Pteronura brasiliensis
Paranonyx microdon
Panthera tigris
Panthera uncia
All species of Sirenia
Tapirus pinchaque
Tapirus bairdii
Rhinoceros unicornis
Rhinoceros sondaicus
Diceros sumatrensis
Vicugna vicugna
All species of Bovini
except *Bos banteng*, *Syncerus*
caffer and *Bison bison*
Oryx leucoryx

Sifakas and Aye-aye
Uakaris
White-nosed saki
Woolly spider monkey
Goeldi's tamarin
Golden tamarins
Orang utan
Chimpanzees
Gorilla
Giant otter
Cameroon clawless otter
Tiger
Snow Leopard
Sirenians
Mountain tapir
Central American tapir
Great Indian rhinoceros
Javan rhinoceros
Sumatran rhinoceros
Vicuna
All wild cattle except the
Banteng, the African buffalo
and the American bison
Arabian oryx

Aves

Pithecopaga jefferyi
Oreophaps derbianus
Rhynchotus jubatus
All species of *Picathartes*

Monkey-eating eagle
Horned guan
Kagu
Rock fowl

Reptilia

Testudo elapantopus
Testudo radiata
Crocodylus cataphractus
Crocodylus intermedius
Crocodylus moreletii
Crocodylus niloticus
Crocodylus rhombifer
Osteolaemus tetraspis
Gavialis gangeticus
Varanus komodoensis

Galapagos giant tortoise
Madagascar radiated tortoise
African slender-snouted crocodile
Orinoco crocodile
Morelet's crocodile
Nile crocodile
Cuban crocodile
Dwarf crocodile
Indian gaviel
Komodo Island monitor

Flora

Nil

APPENDIX II

Species not yet threatened with world-wide extinction, but the export, import and transit of which must be subject to control in order to avoid undue exploitation incompatible with their survival.

Fauna

Mammalia

All species of Primates*
Thalartos maritimus
Lutra platensis
Lutra provocax
Enhydra lutris
Felis nigripes
Felis serval
Felis pardalis
Felis wiedi
Felis tigrina
Neofelis nebulosa
Panthera pardus
Acinonyx jubatus
Arctocepalus philippii
Odobenus rosmarus
Choeropsis liberiensis
Llama guanicoe
Moschus moschiferus
Bos banteng
Kobus leche
Kobus megaceros
Hippotragus niger
Oryx tao
Addax nasomaculatus

Primates
Polar bear
La Plata otter
Southern river otter
Sea otter
Black-footed cat
Serval
Ocelot
Margay
Tiger-cat
Clouded leopard
Leopard
Cheetah
Guadelupe fur seal
Walrus
Pygmy hippopotamus
Guanaco
Musk-deer
Banteng
Lechwe
Nile lechwe
Sable antelope
Scimitar-horned oryx
Addax

Aves

All species of Falconiformes*

New World vultures, Secretary
birds, hawks, eagles, harriers,
Old World vultures, ospreys,
falcons and caracaras
Grey jungle fowl
All species of crane except the
common crane
Amazonian parrots
Owls
Quetzal
Cocks-of-the-rock
Rothschild's starling

Gallus sonneratii

All species of *Grus* except
Grus grus
All species of *Amazona*
All species of Strigiformes
Pharomachrus mocinno
All species of *Rupicola*
Leucopsar rothschildi

(Continued on Page 166)

World's crocodilians being depleted at rate greater than they can sustain

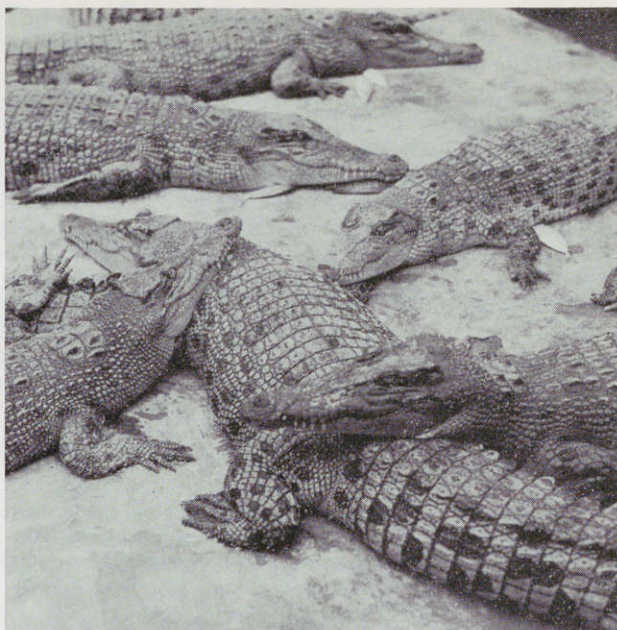
Practically all crocodilians (alligators, caimans, crocodiles and gavials) are consistently being depleted for commercial purposes more rapidly than they can reproduce themselves. Only the American alligator is recovering its numbers to some degree, under careful management practices. Working from these facts, members attending the first meeting of IUCN's Crocodile Group, held on 15-17 March 1971 at the New York Zoological Society and under their sponsorship, attempted to pin-point the most pressing management, research and funding needs for crocodilians throughout the world. Financial assistance for the meeting was also provided by the World Wildlife Fund.

High priority was given to restocking programmes – similar to the programme already in existence in South Africa for the Nile crocodile, *Crocodylus niloticus* – for two rapidly disappearing African species, *Crocodylus cataphractus*, the African slender-snouted crocodile and *Osteolaemus tetraspis*, the dwarf crocodile. Some species were considered so endangered as to warrant the establishment of captive breeding nuclei with the purpose of building up stocks of such species as *Crocodylus rhombifer*, the Cuban crocodile; *C. moreletii*, Morelet's crocodile; *C. intermedius*, the Orinoco crocodile and *Gavialis gangeticus*, the gaviel. The owner of the world's largest and most successful crocodile farm, located in Thailand, offered to conduct this programme for the Group once specimens had been obtained and shipped to the farm.

The farm has over 11,000 individuals, mainly the salt-water crocodile, *Crocodylus porosus*, with some Siamese crocodile, *C. siamensis*, which is virtually extinct in the wild state. In 1970, a total of some 3,500 eggs were laid by breeding females on the farm, 500 more than the previous year and 1,000 more than 1968. The success of the farm has proved the feasibility of breeding crocodiles in captivity, *given the proper conditions*. The Group was careful to distinguish between a crocodile farm, where the products resulted from eggs laid on the farm and a rearing station which took eggs from the wild for incubation and subsequent rearing. The Group also strongly recommended that the taking of crocodilian eggs should be subject to strict control and offered to act as advisers to governments on this matter and on the conditions that should obtain in any rearing programme. Whilst crocodile farming in a captive or semi-captive state was considered an important conservation tool by the Group, it was recognized that it would be many years before pressures on wild populations were relieved by this means since the number of hides required by the leather industry was far greater than could at present be supplied by the small number of farms. Other conservation measures were urgently required.

Other measures proposed were the establishment of crocodile sanctuaries in key areas, the prohibition of commerce in skins over a certain size – a measure found to be much more effective in Papua and New Guinea than a straight kill prohibition – and the careful management of wild populations. In Louisiana, USA, in particular, a managed alligator industry is considered the only incentive to local farmers to maintain their land as alligator habitat. Promotion of the industry is considered so important in Louisiana that \$100,000 per year is spent by the State on alligator research.

The future of the crocodilians is gloomy. Unless governments are prepared to ban totally the taking of certain of the more endangered species for an indefinite period and strictly to control the cropping of the other species, it is unlikely that crocodilians will survive. Indeed, owing to the difficulty of identifying species by their hide and the consequent impracticality of enforcing total bans for some species, there is a strong case for



CROCODILE FARM – More than 11,000 crocodiles of all ages live at the world's largest and most successful crocodile farm in Thailand. Mr. Uthai Yangprapakorn owns the 25-year old farm, which breeds saltwater crocodiles, *Crocodylus porosus*, and the Siamese crocodile, *C. siamensis* (above). The latter reptile is virtually extinct in the wild. Photo: F. Vollmar – WWF

calling a temporary moratorium on the commercialization of all crocodilian hides until such time as governments can produce plans for cropping the resource on a sustained yield basis.

The meeting was chaired by Dr. F. Wayne King, Curator of Herpetology at the Bronx Zoo, and was organized by him and by Miss Moira Warland, IUCN Secretariat Executive Officer for the SSC.

Tai Reserve in Ivory Coast may become a National Park

Preservation of representative samples of undisturbed ecosystems, particularly in areas where losses have been accelerating in recent years, has been of increasing interest to IUCN, and of special concern to the Commission on Ecology and the International Commission on National Parks. One direction in which this interest has taken form is an expanding effort to develop a system of tropical rain forest national parks.

For a number of past months, IUCN has devoted considerable attention to the Tai Forest Reserve in the south-western part of Ivory Coast, a large area (425,000 hectares) containing the last undisturbed lowland tropical rain forest in Africa west of the Dahomey gap. Flora and fauna are rich and of great scientific interest. Several of its mammal species are listed in the Red Data Book.

Until recently its remoteness from urban centers and the scarcity of roads offered protection to the whole of this thinly populated region. However, this is now changing. A sea port is being completed at San Pedro and many new roads have been built. Timber is being felled around the sanctuary. Timber companies are said to be exerting strong pressure to obtain claims in the reserve itself, and mills have been constructed close to the sanctuary. Settlement also is being encouraged.

Recently Mr. Jacques Toro, a personal delegate of the Ivory Coast's Minister of Agriculture, visited Morges to discuss preservation of the Tai Reserve and its possible establishment as a National Park. Discussions with Mr. Toro and with the World Wildlife Fund have resulted in an IUCN/WWF survey project, which began in mid-April. Dr. Urs Rahm of Basle, an expert in tropical rain forests and former Director General of ISRA in the Democratic Republic of the Congo, is conducting the survey as the first stage in the preparation of a management plan for the Reserve as a National Park. The World Wildlife Fund is financing this phase of the project.

Report of the second meeting of the Marine Turtle Group (SSC)

The Marine Turtle Group held its second biennial meeting in Morges, 8-10 March. Eleven members of the scientific group were present, along with two representatives from commercial "turtle" enterprises.

Reports given by Group members and other authors underlined changes in the marine turtle research and conservation situation since the previous meeting. In Queensland, Australia, many turtle resource surveys have been undertaken with the help of grants from the World Wildlife Fund (U.S.) and substantial rookeries have been found and research farms established.

The delegate from Sabah reported that a substantial sum had been raised, as a result of a television programme in the USA, for the purchase of three key "turtle islands". At the time of the report this purchase was being negotiated with the Malaysian Government.

Further surveys had been undertaken in south-east Africa, Mozambique, Madagascar, Europa Island (Réunion) and the Mascarenes and some totally unexploited rookeries were discovered, providing valuable opportunities for baseline research into natural populations.

Points for concern included the continued failure to ratify the tripartite agreement between Costa Rica, Nicaragua and Panama (see IUCN Bull. 2 (15) 128) for the conservation of their green turtle resources. In addition, the exploitation of the olive ridley is rapidly increasing on the Pacific coast of Central America; the establishment of a Commission was suggested between Guatemala, Honduras, Mexico, Nicaragua and Panama as a mechanism for control.

Uncontrolled taking of turtle eggs continues to be the greatest overall threat of all species. The Group agreed to serve as a special consultative body to governments of countries where turtles occur, offering counsel on all aspects of turtle conservation, including the taking of eggs.

Concern was also expressed at the growing market for turtle products in Japan and the turtle steak market in coastal areas of the United States.

A valuable feature of this second meeting was the attendance of a director of the world's first turtle farm, Mariculture Limited of Grand Cayman Island in the British West Indies, and the head of Europe's leading turtle soup firm. The trade in turtle products, in addition to meat and eggs, includes calipee (the cartilaginous material taken from among the bones of the belly shell) for soup, hides for turtle leather, shells for "tortoise-shell", oil for cosmetics, and even stuffed yearling turtles for souvenirs. Sea turtles and their eggs have always been an important local source of protein in the tropical areas where they nest, but this non-commercial use is not considered a threat to the various species.

Mariculture agreed to obtain for its hatching programme only turtle eggs that otherwise would be subject to natural destruction. Group members will exchange experience with Mariculture on captive breeding experiments. Mariculture is pioneering commercial farming of sea turtles, a process which, it is hoped, eventually will reduce the pressure on dwindling natural sources. The venture began in 1968 and some 44,000 green turtles are at present being raised.

Assurances were received by the Group from the representative of the turtle soup industry of continuing cooperation in refusing to buy turtles illegally or inadvisably taken.

Research priorities for the next two years include:

1. mapping of group-nesting sites, particularly undocumented areas of Australia, Africa, Indonesia and South America;
2. research into captive culture techniques;
3. population ecology and energy flow studies;
4. taxonomic-zoogeographic studies.

Considerable praise was voiced for the U.S. Endangered Species Act of 1969 as constructive legislation. Three

species and their products cannot be imported into the United States. They are Kemp's ridley, hawksbill and leatherback turtles.

The meeting was chaired by Dr. Gerardo Budowski, Director General of IUCN and Dr. Colin Holloway, IUCN ecologist, and organized by Miss Moira Warland, IUCN Secretariat executive officer for the Survival Service Commission. The World Wildlife Fund provided major financial assistance.

Members of the Turtle Group present were:

Dr. Gustavo Casas Andreu, Professor Leo Brongersma, Dr. Robert Bustard, Professor Archie Carr (Chairman), Mrs. Mary-Margaret Goodwin, Professor John Hendrickson, Dr. Harold Hirth, Mr. George Hughes, Dr. Peter Pritchard, Dr. Dietrich Sahrhage and Mr. George de Silva.

Mr. John Lusty of London represented the turtle soup industry, while Mr. Mark Fisher took part for Mariculture.

U. S. A. authorizes 36th National Park

President Nixon has signed into law a bill authorizing the creation of Voyageurs National Park on the Minnesota-Canadian border to preserve one of the Nation's most beautiful recreational areas for the enjoyment of the public.

The Act provides that the Secretary of the Interior may establish the park when sufficient lands and waters have been acquired to make a park possible and practical. The new park - 36th in the U.S. National Park System - will contain approximately 139,000 acres of north woods country plus 80,000 acres of lakes and streams. Almost 79,000 acres are in private ownership, and will have to be purchased.

Waterways will be the primary means of travel within the park. The major lakes are Rainy Lake - the voyageurs' highway - on the Canadian border, Kabetogama Lake and Namakan Lake. In addition the park contains some 50 smaller lakes, many accessible only by foot trails.

The land, four times scraped bare by glaciers, is comprised of remnants of some of the earth's oldest rocks and mountains. The original pine forests, logged off in the 19th century, have been replaced by second growth pine, spruce, aspen and birch.

The area also contains many bogs, the habitat of a number of wild animals and the breeding ground for much aquatic life and wildfowl.

The second growth forest has protected the area, keeping streams and lakes clear and providing food and shelter for a wide variety of animal life, including moose, white-tailed deer, black bear, a few timber wolves and many smaller animals. A rare and endangered species, the lake sturgeon, lives in some of the larger lakes.

IUCN appoints UN representative

Dr. Richard N. Gardner, Moses Professor of Law and International Organization at Columbia University and former United States Deputy Assistant Secretary of State, has been appointed to serve as the representative of IUCN to the United Nations. Professor Gardner will represent the Union at meetings at UN Headquarters whenever environmental problems are to be discussed.

Professor Gardner has long been a leading advocate of international action to deal with the environmental crisis. He is also serving currently as a consultant to the Secretary-General of the UN's environment conference scheduled for Stockholm in June 1972 and as the United States member of the Board of Trustees of the United Nations Institute for Training and Research (UNITAR).

A total ban on spring hunting on the whole territory of the Russian Federation (the largest Soviet Republic) has been issued again this year. This regulation aims at restoring wildfowl populations.

The Ramsar Conference

This Conference was convened by the Government of Iran. It was sponsored by the International Wildfowl Research Bureau, and co-sponsored by the Food and Agricultural Organization, United Nations Educational, Scientific and Cultural Organization, International Biological Programme, International Union for Conservation of Nature and Natural Resources, International Council for Bird Preservation, World Wildlife Fund, and Conseil International de la Chasse.

Final Act of the International Conference on the Conservation of Wetlands and Waterfowl

Held at Ramsar, Iran, 30 January to 3 February 1971

1. The Imperial Government of Iran, in accordance with recommendations of earlier international meetings on wetlands and waterfowl conservation, convened an International Conference on the Conservation of Wetlands and Waterfowl, with a view to promoting international collaboration in this field.
2. The Conference met at Ramsar, Iran, from 30 January to 3 February 1971.
3. Credentials were received by the Secretariat of the Conference from the Governments of the following States:

Belgium	Iran	Sweden
Denmark	Ireland	Switzerland
Finland	Jordan	Turkey
France	The Netherlands	Union of Soviet
Federal Republic of Germany	Pakistan	Socialist Republics
India	South Africa	United Kingdom
	Spain	
4. The Governments of the following countries sent Observers to the Conference:

Bulgaria	Hungary	Rumania
Greece	Italy	
5. The following Specialized Agencies of the United Nations sent Observers to the Conference:
 - Food and Agricultural Organization (FAO)
 - United Nations Educational, Scientific and Cultural Organization (UNESCO)
6. The following Non-Governmental Organizations sent Observers to the Conference:
 - Conseil International de la Chasse (CIC)
 - International Council for Bird Preservation (ICBP)
 - International Union for Conservation of Nature and Natural Resources (IUCN)
 - International Wildfowl Research Bureau (IWRB)
 - Special Committee for the International Biological Programme of the International Council of Scientific Unions (IBP)
 - World Wildlife Fund (WWF)
7. The Conference elected Mr. E. Firouz, Head of the Imperial Iranian Delegation, as President of the Conference.
8. The Conference elected as Vice-Presidents, Dr. V. D. Denisov, Head of the Delegation of the Union of Soviet Socialist Republics, and Prof. Dr. M.F. Mörzers-Bruyns, Head of the Delegation of the Kingdom of the Netherlands.
9. The Iranian Game and Fish Department and the International Wildfowl Research Bureau (IWRB) provided the Secretariat of the Conference. Prof. G.V.T. Matthews, Director of IWRB, was appointed Rapporteur-General of the Conference.
10. The following Committees were established by the Conference:

Credentials Committee

Mr. S.A. Hejmadi	(India)
Mr. A. Dakhgan	(Jordan)
Dr. L.E. Esping	(Sweden) (acting as Rapporteur)
Dr. A. Schifferli	(Switzerland)

Drafting Committee

Count Cornet d'Elzius (Belgium)
 Dr. W. Erz (Federal Republic of Germany)
 Dr. M. Nabavi (Iran)
 Dr. E.J. Ph. Roberts (The Netherlands)
 Prof. Yu. Isakov (USSR)
 Rapporteurs: Sir Hugh Elliott (IBP)
 Mr. F.G. Nicholls (IUCN)

11. The Conference was deeply impressed by the decision included in the Message sent to it by H.I.M. Mohammad Reza Pahlavi, Aryamehr, Shahanshah of Iran, that the

Imperial Iranian Government would place one of its wetland ecosystems of special global significance in joint trust with a suitable international agency, such as the United Nations Organization, to conserve and administer for all mankind. The Conference commended this most important precedent to other Governments.

12. The Government of Iran in convening the Conference referred to it the draft of a Convention on Wetlands of International Importance, especially as Waterfowl Habitat, which had resulted from an international meeting of experts held at Espoo, Finland, in March 1970. This draft, together with comments of the Governments of France, the Netherlands, Sweden and the USSR concerning it, constituted the basis for discussion by the Conference.
13. On the basis of its deliberations, as recorded in the summary records of its sessions, the Conference prepared and adopted in accordance with its rules of procedure a final text of the Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, which is appended as Annex I to this Final Act.
14. In the course of discussions on the draft Convention, the Conference agreed that whilst the final text of the Convention does not include an article concerning territorial application, this will not preclude Parties to the Convention indicating at any time to which territories constitutionally associated with them, the Convention shall apply.
15. In approving the final text of the Convention, the Head of the Delegation of the Union of Soviet Socialist Republics abstained from approving Articles 9 because it contained the provision that only members of the United Nations, the Specialized Agencies, the International Atomic Energy Agency or Parties to the Statute of the International Court of Justice may become Parties to the Convention. His Delegation believed that all countries should have the right to become Parties to the Convention, since this would contribute to the cause of conservation of wetlands and waterfowl, and he noted that birds recognized no boundaries. He expressed the hope that these views will be taken into consideration by governments at the time the Convention is opened for signature.
16. The Representative of UNESCO stated that UNESCO was willing to accept the duties of Depositary as specified in the final text of the Convention, subject to final legal clearance by the Organization and subsequent notification of its acceptance to the Imperial Government of Iran.
17. The Representative of IUCN stated that he was authorized to accept on behalf of IUCN the bureau duties specified in the final text of the Convention.
18. The Conference invited the Imperial Government of Iran to take the necessary steps to prepare the final document containing the English, French, German and Russian texts of the Convention and, after submission for verification to the Governments represented at this Conference, to open the Convention for signature at a convenient date.
19. During the course of discussion of the draft Convention the Conference decided to note the following points:
 - a) The waterfowl referred to in the Convention include the following groups of birds:

Gaviiformes	(Divers)
Podicipediformes	(Grebes)
Pelicaniformes	(Pelicans, Cormorants, Darters)
Ciconiiformes	(Herons, Bitterns, Storks, Ibises, Flamingos)
Anseriformes	(Screamers, Swans, Geese, Ducks)
Gruiformes	(Cranes)
Ralliformes	(Coots, Rails)
Charadriiformes	(Waders, Gulls, Terns)

- b) The entries in the List of Wetlands of International Importance which is to be maintained under the Convention could usefully be supplemented by descriptions of the biotopes involved and an enumeration of the bird species especially in need of protection therein.
20. The Conference adopted eleven Recommendations which are submitted to the Governments and other Bodies concerned for consideration and appropriate action. Although in sympathy with the intention of Recommendations 1 to 5, Delegates from some countries refrained from voting on them for the formal reason that they did not wish to be involved in the internal affairs of the countries concerned. These Recommendations are appended as Annex II to this Final Act and relate to:
- 1) Conservation of the Waddensea, northwestern Europe.
 - 2) Conservation of Thjorsarver, Iceland.
 - 3) Conservation of North Bull Island, Ireland.
 - 4) Conservation of Lakes Ab-i-Istada and Dasht-e-Nawar, Afghanistan.
 - 5) Conservation of the Medway Estuary, England.
 - 6) Oil Pollution.
 - 7) Pesticides.
 - 8) Promotion of Wetlands Research.
 - 9) Promotion of Hunting Research.
 - 10) African Wetlands.
 - 11) Wetlands and the Man and the Biosphere Programme.

In witness whereof, the Representatives have signed this Final Act.

Done at Ramsar this third day of February, One thousand nine hundred and seventy one, in a single copy in the English language.

The original text of this Final Act shall be deposited by the Government of Iran with the Director General of the United Nations Educational, Scientific and Cultural Organization who shall send a certified copy of this instrument to each of the Governments represented at the Conference.

(Signed by the President and Rapporteur-general, and Representatives of Denmark, Finland, France, the Federal Republic of Germany, India, Iran, Ireland, Jordan, the Netherlands, Pakistan, South Africa, Spain, Sweden, Switzerland, Turkey, Union of Soviet Socialist Republics and Great Britain.)

(Annex I)

Convention on Wetlands of International Importance, Especially as Waterfowl Habitat

Final Text Adopted
by the International Conference of Wetlands
and Waterfowl at Ramsar, Iran,
on 2 February 1971

The Contracting Parties, Recognizing the interdependence of Man and his environment;

Considering the fundamental ecological functions of wetlands as regulators of water regimes and as habitats supporting a characteristic flora and fauna, especially waterfowl;

Being convinced that wetlands constitute a resource of great economic, cultural, scientific and recreational value, the loss of which would be irreparable;

Desiring to stem the progressive encroachment on and loss of wetlands now and in the future;

Recognizing that waterfowl in their seasonal migrations may transcend frontiers and so should be regarded as an international resource;

Being confident that the conservation of wetlands and their flora and fauna can be ensured by combining far-sighted national policies with co-ordinated international action;

Have agreed as follows:

Article 1

1. For the purpose of this Convention wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.
2. For the purpose of this Convention waterfowl are birds ecologically dependent on wetlands.

Article 2

1. Each Contracting Party shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance, hereinafter referred to as "the List", which is maintained by the bureau established under Article 8. The boundaries of each wetland shall be precisely described and also delimited on a map and they may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands, especially where these have importance as waterfowl habitats.
2. Wetlands should be selected for the List on account of their international significance in terms of ecology, botany, zoology, limnology or hydrology. In the first instance wetlands of international importance to waterfowl at any season should be included.
3. The inclusion of a wetland in the List does not prejudice the exclusive sovereign rights of the Contracting Party in whose territory the wetland is situated.
4. Each Contracting Party shall designate at least one wetland to be included in the List when signing this Convention or when depositing its instrument of ratification or accession, as provided in Article 9.
5. Any Contracting Party shall have the right to add to the List further wetlands situated within its territory, to extend the boundaries of those wetlands already included by it in the List, or, because of its urgent national interests, to delete or restrict the boundaries of wetlands already included by it in the List and shall, at the earliest possible time, inform the organization or government responsible for the continuing bureau duties specified in Article 8 of any such changes.
6. Each Contracting Party shall consider its international responsibilities for the conservation, management and wise use of migratory stocks of waterfowl, both when designating entries for the List and when exercising its right to change entries in the List relating to wetlands within its territory.

Article 3

1. The Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands in their territory.
2. Each Contracting Party shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the List has changed, is changing or is likely to change as the result of technological developments, pollution or other human interference. Information on such changes shall be passed without delay to the organization or government responsible for the continuing bureau duties specified in Article 8.

Article 4

1. Each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening.
2. Where a Contracting Party in its urgent national interest, deletes or restricts the boundaries of a wetland included in the List, it should as far as possible compensate for any loss of wetland resources, and in particular it should create additional nature reserves for waterfowl and for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat.
3. The Contracting Parties shall encourage research and the exchange of data and publications regarding wetlands and their flora and fauna.
4. The Contracting Parties shall endeavour through management to increase waterfowl populations on appropriate wetlands.
5. The Contracting Parties shall promote the training of personnel competent in the fields of wetland research, management and wardening.

Article 5

The Contracting Parties shall consult with each other about implementing obligations arising from this Convention especially in the case of a wetland extending over the territories of more than one Contracting Party or where a water system is shared by Contracting Parties. They shall at the same time endeavour to co-ordinate and support present and future policies and regulations concerning the conservation of wetlands and their flora and fauna.

Article 6

1. The Contracting Parties shall, as the necessity arises, convene Conferences on the Conservation of Wetlands and Waterfowl.
2. These Conferences shall have an advisory character and shall be competent inter alia:
 - a) to discuss the implementation of this Convention;
 - b) to discuss additions to and changes in the List;
 - c) to consider information regarding changes in the ecological character of wetlands included in the List provided in accordance with Paragraph 2 of Article 3;
 - d) to make general or specific recommendations to the Contracting Parties regarding the conservation, management and wise use of wetlands and their flora and fauna;
 - e) to request relevant international bodies to prepare reports and statistics on matters which are essentially international in character affecting wetlands.
3. The Contracting Parties shall ensure that those responsible at all levels for wetlands management shall be informed of, and take into consideration, recommendations of such Conferences concerning the conservation, management and wise use of wetlands and their flora and fauna.

Article 7

1. The representatives of the Contracting Parties at such Conferences should include persons who are experts on wetlands or waterfowl by reason of knowledge and experience gained in scientific, administrative or other appropriate capacities.
2. Each of the Contracting Parties represented at a Conference shall have one vote, recommendations being adopted by a simple majority of the votes cast, provided that not less than half the Contracting Parties cast votes.

Article 8

1. The International Union for Conservation of Nature and Natural Resources shall perform the continuing bureau duties under this Convention until such time as another organization or government is appointed by a majority of two thirds of all Contracting Parties.
2. The continuing bureau duties shall be, inter alia:
 - a) to assist in the convening and organizing of Conferences specified in Article 6;
 - b) to maintain the List of Wetlands of International Importance and to be informed by the Contracting Parties of any additions, extensions, deletions or restrictions concerning wetlands included in the List provided in accordance with Paragraph 5 of Article 2;
 - c) to be informed by the Contracting Parties of any changes in the ecological character of wetlands included in the List provided in accordance with Paragraph 2 of Article 3;
 - d) to forward notification of any alterations to the List, or changes in character of wetlands included therein, to all Contracting Parties and to arrange for these matters to be discussed at the next Conference;
 - e) to make known to the Contracting Party concerned, the recommendations of the Conferences in respect of such alterations to the List or of changes in the character of wetlands included therein.

Article 9

1. This Convention shall remain open for signature indefinitely.
2. Any member of the United Nations or of one of the Specialized Agencies or of the International Atomic Energy Agency or Party to the Statute of the International Court of Justice may become a party to this Convention by:
 - a) signature without reservation as to ratification;
 - b) signature subject to ratification followed by ratification;
 - c) accession.
3. Ratification or accession shall be effected by the deposit of an instrument of ratification or accession with the Director General of the United Nations Educational, Scientific and Cultural Organization, (hereinafter referred to as "the Depository").

Article 10

1. This Convention shall enter into force four months after seven States have become Parties to this Convention in accordance with Paragraph 2 of Article 9.
2. Thereafter this Convention shall enter into force for each

Contracting Party four months after the day of its signature without reservation as to ratification, or its deposit of an instrument of ratification or accession.

Article 11

1. This Convention shall continue in force for an indefinite period.
2. Any Contracting Party may denounce this Convention after a period of five years from the date on which it entered into force for that Party by giving written notice thereof to the Depository. Denunciation shall take effect four months after the day on which notice thereof is received by the Depository.

Article 12

1. The Depository shall inform all States that have signed and acceded to this Convention as soon as possible of:
 - a) signatures to this Convention;
 - b) deposits of instruments of ratification of this Convention;
 - c) deposits of instruments of accession to this Convention;
 - d) the date of entry into force of this Convention;
 - e) notifications of denunciation of this Convention.
2. When this Convention has entered into force, the Depository shall have it registered with the Secretariat of the United Nations in accordance with Article 102 of the Charter.

In witness whereof, the undersigned, being duly authorized to that effect, have signed this Convention.

Done at **this** day of 19...., in a single original in the English, French, German and Russian languages, in any case of divergency the English text prevailing, which shall be deposited with the Depository which shall send true copies thereof to all Contracting Parties.

(Annex II)

Recommendations Adopted by the International Conference on the Conservation of Wetlands and Waterfowl

at Ramsar, Iran, on 3 February 1971

Conservation of specific wetlands

Recommendation 1. Conservation of the Waddensea, northwestern Europe.

The Conference,

Considering that multi-disciplinary international research in recent years has shown convincingly the unrivalled value of the Waddensea as a natural resource; because of its high biological productivity and its geographical situation it is of vital importance for literally millions of Eurasian waterfowl;

Recognizing that this area in the territories of Denmark, the Federal Republic of Germany and the Netherlands is threatened by development plans involving the construction of dams and dykes, the establishment of industries and other human impacts which are altering the present ecological situation;

Being especially aware of the immediate danger of pollution by industrial waste and sewage waters;

Recommends to the Governments of Denmark, the Federal Republic of Germany and the Netherlands that action be taken to halt the implementation of any such planning until appropriate research has demonstrated that no harmful effects will result,

and further recommends that consideration be given to including the Waddensea area in the List of Wetlands of International Importance to be established under the proposed Wetlands Convention.

Recommendation 2. Conservation of Thjorsarver, Iceland.

The Conference,

Being informed of the international importance of the Thjorsarver area in central Iceland as the breeding ground of more than half the world population of *Anser brachyrhynchus*;

Being aware of the valuable ecological research being started in the area;

Recommends to the Government of Iceland that it delay the proposal to flood Thjorsarver for hydro-electric purposes until the results of research permit a re-evaluation of resources allocation in this area.

Recommendation 3. Conservation of North Bull Island, Ireland.

The Conference,

Noting that development has commenced of North Bull Island near Dublin, a vitally important waterfowl habitat;

Considering that it ranks fourth in importance among Ireland's list of wetlands, is the winter habitat of many thousands of waterfowl, and moreover is the only wetland of international significance within a capital city in Europe;

Being deeply concerned at the development of this area;

Recommends to the Government of Ireland that this wetland should be excluded from further development.

Recommendation 4. Conservation of Lakes Ab-i-Istada and Dasht-e-Nawar, Afghanistan.

The Conference,

Being advised that recent studies of wetlands in Afghanistan have shown that Lakes Ab-i-Istada and Dasht-e-Nawar are of great international importance as wintering and breeding places for waterfowl including for varying periods the greater part of the world population of the Siberian Crane *Grus leucogeranus*;

Recommends to the Government of Afghanistan that these valuable wetlands be given protection from disturbance at all times, and suggests that they seek financial or other assistance from international organizations if this is required.

Recommendation 5. Conservation of the Medway Estuary, England.

The Conference,

Noting that it is proposed that the Medway Estuary in Kent, England, be considered for development as a maritime industrial development area (MIDA);

Taking into consideration that the area is of outstanding international importance to migratory waterfowl and could well become critically important as a wintering ground for part of the fifth of the world population of the darkbellied race of the Brent goose, *Branta bernicla*, that would be displaced if Foulness became the site for London's third airport or a "Europort" dock complex;

Recommends that the United Kingdom Government exclude this vitally important area from such development projects.

POLLUTION

Recommendation 6. Oil Pollution

The Conference,

Noting with anxiety the accelerated frequency of oil pollution of the sea by derris and by oil discharge from ships which do not respect the International Convention for the Prevention of the Pollution of the Sea by Oil;

Recommends to the appropriate States and International Organizations that they bring to the attention of competent authorities the primary importance of:

- Ensuring strict supervision on coastal waters, especially in the Caspian Sea, the Baltic Sea, the Kattegat, the North Sea and the Channel;
- Accelerating research into combatting oil pollution; and
- applying promptly and rigorously the statutory punishments.

Recommendation 7. Pesticides.

The Conference,

Noting with concern the grave danger to wetlands and their flora and fauna represented by the use of persistent pesticides, such as chlorinated hydrocarbons, due to run off, discharge of waste products and deliberate application;

Deploring an apparent tendency for such pesticides although often banned or restricted in the countries of manufacture, to be exported in quantity and even offered for sale at reduced prices to less developed countries, which may lead to the degradation of natural areas including wetlands of international importance;

Recommends that governments both of countries from which such pesticides originate and of those in which their use is not yet fully controlled take all necessary measures to curtail and, wherever possible, ban or severely restrict the sale and use of persistent pesticides.

RESEARCH AND INVESTIGATION

Recommendation 8. Promotion of wetlands research.

The Conference,

Being aware of the serious and deteriorating situation facing waterfowl in many parts of the Palaearctic Region;

Realizing the need for improving scientific information for the correct assessment of wetlands for the proposed Wetlands Convention;

Recommends that Governments and all appropriate departments and institutions concerned with natural resources should assist and facilitate wetland research at all levels, and in particular:

- that all countries which do not already carry out regular waterfowl counts on important wetlands should endeavour to do so at least twice a year on dates advised by The International Wildfowl Research Bureau;
- that all countries should assess their wetlands in respect of the need to provide a chain of effective refuges, these being selected for their value for waterfowl as well as permanence despite varying conditions of rainfall in arid areas; and
- that if countries are unable to undertake this work from their own resources they should seek assistance from appropriate international organizations.

Recommendation 9. Promotion of Hunting Research

The Conference,

Recommends that waterfowl research organizations in different countries should undertake:

- to make every effort to obtain data on the breeding success and productivity of the main species involved;
- to produce general mortality data based on recovery of ringed birds to be compared with other measures of productivity; and
- to carry out special studies on the effect of hunting on wildfowl populations, by means of ringing data and the use and development of realistic hunting kill or capture statistics.

and further recommends that international and national hunters' organizations should:

- encourage sportsmanlike methods in hunting, and stop actions which obviously lead to mass destruction or loss of waterfowl;
- intensify educational measures to improve hunters' knowledge of different species of waterfowl; and
- make hunters aware of their responsibilities for conservation and wise use of waterfowl resources through proper hunting practices.

Recommendation 10. African Wetlands.

The Conference,

Noting with satisfaction, that the new African Convention on Conservation of Nature and Natural Resources, in force since 1969, deals specifically with wetlands as a productive natural resource and obliges the Contracting States to undertake ecologically sound measures for the conservation, management and utilization of wetlands;

Taking into consideration the importance of African wetlands as habitats for migratory waterfowl breeding in northern and central Eurasia, but wintering in Africa;

Recommends that African Governments encourage research on productivity of wetlands and, possibly with the help of UNESCO, establish an African List of wetlands of international importance, especially as waterfowl habitat, in conformity with the Project MAR list for Europe, published in 1965 by the IUCN.

Recommendation 11. Wetlands and the Man and the Biosphere

The Conference,

Noting with satisfaction UNESCO's new programme on "Man and the Biosphere" (MAB) involving the planning of world-wide research into, and the monitoring of, the role and productivity of various ecosystems or major habitats, as a basis for conservation, management, wise utilization and sustained yield;

Recommends that wetlands in all parts of the world should be brought within the scope of the MAB programme.

WWF-IUCN note anniversary of the Morges Manifesto

The Director-General of IUCN, Dr. Gerardo Budowski, and the Secretary-General of the World Wildlife Fund, Dr. Fritz Vollmar, issued the following joint statement on the occasion of the 10th anniversary of the Morges Manifesto:

"Ten years ago, in April 1961, the Morges Manifesto was issued by 16 of the world's leading scientists, naturalists and businessmen, who were concerned at the rapidly increasing devastation of wild nature.

"They foresaw that the 1960's promised to beat all past records for wiping out the world's wildlife, and called for a vigorous effort to meet the emergency in the name of Mankind's self-respect and inheritance on this earth.

"The Manifesto led to the founding of the World Wildlife Fund to raise voluntary contributions for wildlife conservation. The Fund has played a major role in financing the work of the IUCN, an independent international organisation comprising states, government departments, international and private organisations, which has provided a scientific foundation for conservation.

"Today, ten years on, we can say that there has been considerable success in holding the line, despite continuing grave threats. Several creatures such as the Orang Utan, the Javan rhinoceros, the Hawaiian goose, and the Arabian oryx, have almost certainly been saved by effective action. In areas, such as Africa, about which there were grave fears, great strides have been made to conserve wildlife, which has proved its value as an economic resource for the benefit of man.

"Many countries have established National Parks, although many more are needed for adequate preservation of fauna, flora, and geologic structures. Apart from economic, scientific, cultural and recreational reasons for preservation, the present generation has a duty to pass on this irreplaceable heritage to its successors.

"In large parts of the world there is now considerable public and governmental awareness of the threat of pollution of the environment and bad management of land, water and other resources, which bodes well for future action. Great hopes are placed on the outcome of next year's United Nations Conference on the Human Environment.

"But time is not on our side and in many areas the vital need for conservation of the limited natural resources of the world is not understood or is ignored. It must be universally recognised that conservation is an essential tool for development.

"The IUCN and the World Wildlife Fund pledge themselves anew to every effort to advance practical conservation of the natural world for the benefit of all life on earth."

In the past ten years the World Wildlife Fund has made grants totalling £ 2,234,019, \$5,661,827 or SFr. 24,411,886 to 359 conservation projects in 57 countries.

These grants have led to the grant of an equal amount from other sources, official and private, resulting in conservation of wild species and threatened areas.

World Wildlife Fund's 1971 programme includes 93 projects for which it plans to raise £ 568,037, \$1,363,389 or SFr. 5,850,781 with the help and contributions of private donors as well as business firms and foundations.

Meeting on Pacific Islands

A Regional Symposium on the Conservation of Nature-Reefs and Lagoons, will be held 4-14 August, 1971, at Noumea, New Caledonia just prior to the Twelfth Pacific Science Congress to be held 18-27 August, 1971 in Canberra, Australia. The Noumea Meeting is being convened by the South Pacific Commission. IUCN is a co-sponsor and will notably present its project No. 37-1-2 "Conservation of Certain Pacific Islands as Islands for Science".

Youth Environment Conference scheduled for Canada in August

An estimated 300 young men and women — all under 30 and from all parts of the world — are expected to gather at McMaster University in Hamilton, Ontario, Canada, from 20 to 30 August, 1971, for The International Youth Conference on the Human Environment.

Under the theme, "Youth and Environmental Action", the Conference among other purposes is expected to provide a major input for the 1972 UN Conference on the Human Environment in Stockholm. Mr. Maurice Strong, Secretary General of the UN Conference, endorsed the Youth meeting and is cooperating fully in making it a success. The meeting has also been endorsed by the recently concluded White House Conference on Youth, held in Colorado, USA.

The Conference in Canada is being jointly sponsored by the International Youth Federation for Environmental Studies and Conservation, the IUCN and Environic Foundation International.

Objectives of the meeting are fourfold: 1. to focus the attention of young people around the World on the condition and problems of the human environment; 2. to review the present activities undertaken by young people and to assess their significance and role in coping with future environmental problems; 3. to prepare the basis of and international action programme by young people for the rational use and conservation of the human environment, and, 4. to consider the involvement of youth in the formulation of international action plans and agreements to be discussed at the 1972 UN Conference, as well as to facilitate the participation of youth in the UN and international organization programmes which may be an outgrowth of that Conference.

Although international youth programmes in environmental conservation can be initiated beforehand (and indeed, have been) one of the purposes in assembling the group is to achieve greater consensus, motivation and clarification on action programmes which require immediate development. The Conference is expected to establish the necessary systems of communication and cooperation among young people as well as to define the objectives and methodology.

Participants preferably will be representatives of youth or student organizations, and involved as individuals in environmental matters. Various organizations will be invited to send observers.

All participants will be housed on the campus at McMaster University without cost.

Young people who are interested in taking part in the Conference are urged to contact the International Youth Conference Secretariat at McMaster University, Hamilton, Ontario, Canada, as soon as possible. In special cases, assistance for travel to and from Canada may be possible, but generally, delegates are expected to be responsible for their own travel costs.

For the first two days, the programme will consist of introductory sessions with lectures, briefings and films. The Conference will then break up into a series of workshop sessions covering the followings topics:

1. Relation of human population and natural resources.
2. Economic and social aspects of environmental issues.
3. Environmental impact of science and technology.
4. Environmental problems of human settlements.
5. Environmental aspects of the management and use of natural resources.
6. Environmental education and information.

The purpose of the workshops will be to formulate a programme of action by young people. Action programmes prepared by each of the workshop series will then be brought together toward the end of the Conference when regional workshops and international youth organization representatives will discuss the priorities and means of implementing the programme.

Wetlands Convention

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areas. It was recommended at the same time that this list be considered as a basis for an international convention on wetlands.

In the recommendations of the First European Meeting on Wildfowl Conservation at St. Andrews, Scotland in 1963, the need for an international convention was also stressed and the IWRB sent out eight draft points to 35 countries. On the reactions received and the opinions expressed at the Second European Meeting on Wildfowl Conservation, at Noordwijk, the Netherlands, in 1966, the Dutch Ministry of Culture, Recreation and Social Welfare started to draft a convention on the conservation of wetlands.

This draft was discussed informally during a working session of the IWRB Executive Board in Morges, Switzerland, in 1967. The formal Draft Convention was circulated prior to the International Regional Meeting on Conservation of Wildfowl Resources in Leningrad in September 1968, in the resolutions of which it was thought "expedient to accelerate the adoption of a convention concerning wetlands conservation, and to provide for strict protection of those wetlands which are of international importance". The Soviets expressed their views on a Wetland Convention in an alternative text.

During the Annual Board Meeting of the IWRB in Vienna in May 1969 both texts were compared and it was decided that a compromise text should be drawn up by the Dutch Ministry. This new text was discussed in March 1970 in Espoo, Finland, by representatives of the international organizations mentioned earlier, together with FAO and the Conseil International de la Chasse (CIS), and ecological and legal experts of ten different nationalities.

As a result of the Espoo meeting, the next text was prepared and submitted to the International Conference held at Ramsar. This was an inter-governmental meeting convened by the Government of Iran and sponsored by the IWRB in collaboration with IUCN, ICBP, FAO and UNESCO.

Group formed to coordinate non-marine wetlands conservation

A Working Group, consisting of representatives nominated by FAO, IBP, ICBP, IUCN, IWRB, SIL, and UNESCO, has been set up to provide for consultation between the various interested organizations and to define action needed in relation to various aspects of wetlands conservation. The first meeting was held on 9 March 1971, in London.

The terms of reference of the Working Group are:

1. To provide a mechanism for consultation between various organizations interested in wetlands.
2. To provide IUCN and other organizations concerned with advice in connection with the coordination of activities affecting Projects AQUA, MAR and TELMA.
3. To provide IUCN and other organizations concerned with general advice in matters relating to wetlands and, in particular, in matters relating to the proposed Wetlands Convention and any other action necessary for the implementation of wetlands conservation measures.

IUCN Secretariat is providing an Executive Officer to service the Working Group, and to follow-up specific action decided on by the Working Group.

Commission on Education

The proceedings of the Working Meeting of the IUCN Commission on Education held at Forest Research Institute and Colleges in Dehra Dun, India, 21-22 November, 1969, have been printed by the host Institute. The 74 page publication (IUCN Publications New Series, Supplementary Paper No. 25) is titled „*Environmental Conservation Education Problems in India*,“ is now available from IUCN. The cost is US \$ 1.50.

Convention on Species

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Reptilia

All species of Testudinidae*
All species of Cheloniidae
Dermochelys coriacea
Podocnemis expansa
Podocnemis unifilis
All species of Crocodylia*

Cyclura baeoloph

Flora

All species of Bromeliaceae
All species of Orchidaceae
All succulent species of
Aizoaceae (Ficoidaceae)
All succulent species of Cactaceae
except *Opuntia* species
All succulent species of Crassulaceae

Tortoises
Sea turtles
Leatherback or leathery turtle
South American river turtle
Terecay turtle
Alligators, caymans, crocodiles
and gavials
Andros Island ground iguana

Bromeliads
Orchids

Cacti except prickly pears

* Excluding species listed in Appendix I.

International Symposium on Ecology, Behaviour and Conservation of the World's Cats

A symposium on the above subject was organized by Mr. Randall Eaton and held under the sponsorship and at the headquarters of Lion Country Safari, Laguna Hills, California on March 15-17. Papers read were generally of a high quality and included items of such conservation interest as the status of world conservation efforts for the Felidae, resulting in a review of recommendations for conservation priorities. Apart from the conservation projects already under way, it was agreed that surveys into the ecology, behaviour and habitat of the smaller cat species were of a high priority.

Projects arising from the Symposium, and to be adopted by the Survival Service Commission's Cat Group, which took the opportunity to meet for the first time, include ecological surveys on the Formosa clouded leopard, the Borneo red cat, the rusty spotted cat both in Ceylon and southern India, the marbled cat and the Indian caracal. A feasibility study for an action programme to save the Javan tiger will also be made.

Cat Group projects already operational include surveys on the leopard and cheetah, and on the ocelot and jaguar.

Committee on Marine Habitats formed within Ecology Commission

A Committee on Marine Habitats has been formed within the IUCN Commission on Ecology to advise the Secretariat on all matters pertaining to the marine environment, and to assist in developing and carrying out proposed programmes.

A preliminary meeting of the group was held in Rome last September at which time its terms of reference were adopted, recommendation for membership reviewed and future activities explored.

At the meeting it was decided that projects should be developed on the following topics:

marine parks and equivalent reserves
monitoring information on the state and health of the ocean.

Some preliminary action has already been taken in connection with the first of these topics to begin the task of assembling information on existing and projected marine parks and equivalent reserves. The second project (which is now IUCN Project No. 39-1, Continuing Review of Health of the Ocean) is in preparation.

The Committee will also give attention to IUCN Project Series No. 6-0, Ecology and Conservation of Estuarine Regions and the Coastal Zone.

The next meeting of the Committee is projected to be held in Malta immediately after the Pacem in Maribus meeting on 6 and 7 July, 1971.

A 450-kilogram steer can produce a pound of useful protein in one day's growth, but 450 kilograms of yeast can produce 1,800 kilograms of protein in the same time, according to a report made by Dr. C. R. Gatellier of France at the World Food Congress in Washington, D.C. in August.

Germany's waste oil disposal system

The Federal Republic of Germany has cut the amount of waste oil being dumped into the environment by thousands of tons per year under a 1968 law regulating its disposal. The program's success has interested France and the Netherlands in adopting similar comprehensive approaches.

Waste oil from a multitude of sources has long found its way into convenient dumps and waterways where it impairs biological processes and endangers water supplies. Just one litre of waste oil discharged into surface waters can spoil a million litres of water for public consumption. Oil also contributes significantly to reducing the oxygen content of the water which may result in biological damage. Normal waste treatment processes do not remove oil discharged into sewer systems.

In the past, several European nations have sought to encourage the regenerating of old oil by giving tax incentives to refineries willing to regenerate it. However, questions were raised that such subsidies were in violation of the Treaty of Rome creating the European Economic Community since they gave certain participating oil industries a different competitive basis than those in countries not offering incentives. Germany originally was one of the countries which offered incentives.

In 1968, in response to an initiative by the European Economic Community urging members to harmonize their regulations concerning disposal of waste oil, Germany enacted a comprehensive system to ensure that used oil from all sources was either regenerated without producing water pollution or burned at a temperature high enough to prevent air pollution.

The law provides for the federal government to hire contractors who must agree to collect used oil from anyone with more than 200 litres and to either reprocess or incinerate it. The contractors' collection districts combine to cover the entire country. In some places several contractors are competing to collect the waste oil. At the end of 1970, 17 refineries and 10 incinerators were participating, and together, they reprocessed or burned 226,800 tons, 30,000 more than in 1969.

The program is funded by a special assessment on lubricating oils. Producers or importers pay 7.50 DM per 100 kilograms of oil into a federal reserve fund from which the government pays the collectors. Most suppliers pass the assessment on to their customers (about 6 pfennigs a litre). Thus those who use oil pay the cost of disposal or regeneration.

Enforcement is aided by the requirement that both oil suppliers and the waste oil collectors keep books, the former recording how much oil they produce or import and the latter noting how much oil they have burned or regenerated. These books may be inspected by government officials at any time.

German water laws prohibit the discharge of dangerous substances such as waste oil into surface or ground waters.

Symposium on ungulate behaviour

An international symposium on the behavioural biology of ungulates and how it relates to their conservation and management will be held 2-5 November, 1971, at the Environmental Sciences Centre, University of Calgary, Canada. IUCN is co-operating as a co-sponsor.

The symposium has two aims. First, its proceedings are expected to serve as a reference source for information of fact or concept about ungulate conversation or research, and second, to close the gap between academic research and conservation and management.

Chairmen of the symposium will be Dr. V. Geist of the Environmental Sciences Centre, and F. Walther, Department of Zoology, University of Missouri, U.S.A.

Book Reviews

The IUCN Bulletin undertakes to review books of conservation interest that are donated by authors and publishers to the van Tienhoven Library at IUCN Headquarters. Unless otherwise noted, all reviews are prepared by Prof. Tom Harrisson,

Lawick-Goodall, Hugo and Jane van (1970). *Innocent Killers*. London (Collins). 222 pp.; 52 pages of black and white photographs. 45 s.

We expect something of special interest from these authors. This book is better than that: it is exceptional. It is in some ways a wonderful book, which should do much to enlarge general public interest in conservation and other problems, in rather the same way – but in more depth – than *Elsa the Lioness* from the same publishers some years ago. This fascinating material is introduced in a Preface by Dr. Louis Leakey of Olduvai fame, who writes to the point – and for this reason receives a special commendation from your present reviewer, all too familiar with superfluous "status-prefaces" in recent years for books of this kind.

What makes the text distinctive is that the whole is based on sustained and prolonged close-observation of groups of hitherto neglected smaller wild animals over long periods of time in Serengeti and Ngorongoro. Though occasionally one finds the authors' anthropomorphic approach a bit overdone, it is clear that comments are based on detailed and objective field-notes concerning the groups they report. Similarly the nicknames applied to identify the individuals in the hunting groups and the litters of young are sometimes irritatingly frivolous; nevertheless, to use any other device, such as numbering, could only end up tedious in a story of this kind.

The excellence of the text could not be fully effective without the numerous supporting photographs by Hugo van Lawick-Goodall. It is such a pleasure to turn page over page of illustrations without finding any of those obvious, often so repetitive sequences of easy camera prey illustrated almost to the point of exhaustion in African popular literature. Here we are presented with close-ups into the family life of hyenas and jackals quarrelling, courting, feeding, keeping cool on a hot day and all the rest of the *ordinary* events of savannah life.

There are also some extraordinary events, for example, a lion catching, mauling and choking to death the veteran hyena, Old Gold; or Jason, a jackal, viciously battling with a sand snake; and another jackal fighting a marabou stork over offal. But the outstanding photographs are those of wild dog, including a litter of fourteen pups looking straight into camera like a rugby team, scrum half lost in the pub. There is a magnificent close-up of an adult wild dog regurgitating food – their normal method – into the mouth of a pup, others crowding behind. Memorable, too, is a male courting a female wild dog on heat, she marking some blades of grass with a few drops of urine, while he balances on his front paws and simultaneously marks the same grass in the same way from his elevated posterior end.

Lord, J. and Munns, D. J., Eds. (1970). *Atlas of Breeding Birds of the West Midlands* London (Collins). 276 pp; many text figures and maps. 30 s.

This is a corporate project by the West Midland Bird Club of which the above editors are active members, while the many others who have contributed are listed in an appendix. It was initiated by the survey organized under C. A. Norris in 1946-50.

All the regular breeding birds of Staffordshire, Worcester, and Warwickshire are dealt with, each with a page of text and a text figure opposing a 10 kilometre grid-map of the area, with detailed local information on distribution up to 1968. This is the clearest presentation of its kind yet to be published in English in book form.

The bird drawings are not always quite as good as the text, notably the pigeons and hawks, but they serve their purpose.

We get an impression of highly competent organization, carrying out complicated operations with pleasure and patient skill. The editors discuss the difficulties of obtaining accurate statistics. They give good reasons for preferring to base the grid surveys on study of pairs and breeding behaviour rather than attempting nest counts in every case. The system which the club has adopted is something of a compromise in census terms; the results justify the argument.

A hundred and twenty one species continue to breed regularly in these three counties; five others which have bred in this century are not included.

Apart from the value of all this information for the field ornithologist, it is of value in long-term conservation planning. Here we can see, in black and white, the precise status of every resident bird over a large area at this time, and from now on plot changes, with public reference beyond the level of controversy. This is a factor which is not always sufficiently recognized by conservationists, even in educated (let alone in more 'backward') countries. While a lot of people sympathise with conservation in principle, a lot more feel that conservationists exaggerate through over-enthusiasm or under-information. Faced with the sort of facts in this book, few people would evade the issue. Wherever such facts are available, at any level, it should be a matter of prime concern to publish them in widely available form. In this particular case, no doubt, the West Midlands Bird Club have already given thought to the desirability of issuing separate pages for some species, as cards or maps for school and similar distribution.

McKnight, Tom L. (1969). *The Camel in Australia*. Melbourne University Press, Carlton, Victoria. 160 pp., 12 pls., 12 maps. \$ 4.50 (Australian).

This is a small, lively book, unusual in approach. To start with the author is a young professor of geography at the University of California at Los Angeles, and spent two years, 1961 and again 1966, in Australia, studying his subject matter. He regards the imported camel of that continent with a cool, calculating, somewhat cynical eye.

Surprisingly little is known about the habits and needs of this familiar species, which was well-established with Afghan drivers accompanying the imported beasts in the middle of the nineteenth century. The camel population peaked at 20,000 around 1920. Since then, increasing mechanisation has lowered the demand. Many camels have gone wild, building up large populations through Central Australia. There is heavy predation by man; in Dr. McKnight's words:

"(The camel's) presence is acknowledged almost universally by no other form of recognition than a soft-nosed bullet".

But when the animals first arrived from India the attitude was very different. They were brought first by a man called Horrocks to South Australia in October 1840, where only one survived from a large shipment lost at sea. This creature, generally known in the books as Horrocks' Beast, after a few years work on a sheep station, accompanied its owner and five other men and five horses on a pioneer exploration of the interior. One day Horrocks decided to shoot a bird for the empty pot. While taking ammunition from the pack-saddle, the camel lurched and set off the hammer of his gun, blowing off two fingers and most of his teeth. He died as a result. His companions executed his dying wish by executing the camel for its fault. This episode somehow sets the tempo for the relationship between camels and men in the Australian desert ever since.

The Horrocks camel, and other early individuals, proved of great value to the Australian pioneers, as is lucidly demonstrated in this interesting book. The author puts special emphasis on how camels were and can be used under these conditions. There is a fascinating section on the Australian Afghans, "quietly inconspicuous men" (pp. 66-71). There is a splendid letter signed by some of them, petitioning the Government, as late as 1927, to stop people shooting camels (p. 93). The petition was rejected of course. Nevertheless, there were still over 10,000 in 1966, as is shown in three maps (pp. 110-112).

The author concludes by suggesting that the notoriously hardy Australian camels should be traded for overseas zoo and circus markets. He also demonstrates need for research on the ecological problems raised by the feral herds in the hinterland. Interestingly, the camel seems to have done less to upset any existing balance than any other animal of the many introduced into Australia, so often with hideous aftermaths. Indeed the camel entered a habitat for which no large Australian native animal was fully adapted, browsing on foliage of little or no interest even to domesticated cattle. He crossed humps with man for two unexpected reasons:

1. That camels like to rub the hell out of cattle fences.
2. The aforesaid humps hold fat meat, which is the best bait for the more directly disliked dingo. So set one "pest" to catch another! Such is man...

Nash, T. A. M. (1969) *Africa's Bane: Tsetse Fly*. London (Collins) 224 pp., 8 plates, 11 text figures. 42 s.

Dr. Nash is Director of the Department of Tsetse Research at the University of Bristol in the West of England, and he was formerly Director of the West African Institute of Trypanosomiasis Research in Nigeria. Against this background, he has written an authoritative but simple text, with a lively style and some welcome wit. On the whole conservation literature is grimly serious, justifiably enough, but sometimes a little tediously so. Good illustrations trace the tsetse from birth to insecticidal death.

This insect is, inevitably, a major problem in much of African conservation, even today. The fact that it caused the sleeping sickness was unknown until 1902. Unaware of sources, some African tribes even cut off enlarged neck glands – the first symptom of this disease – as their theoretical cure. But in 1902 trypanosomes found in the blood of a steam boat captain on the River Gambia, gave the clue to intensive research results which quickly followed and were virtually completed by 1912. The effect on sub-Saharan Africa has been enormous: yet there remains "a gigantic problem" (p. 203).

Part of this problem in the very slow peasant understanding of the causation of the disease itself. This is mixed up very closely with the major role of cattle not only as food, but as status symbols among some of the great African people. These and other difficulties have been accentuated in recent years by political change and particularly by political breakdown in some key areas. Moreover, some of the co-operation and co-ordination which was possible under widespread colonial systems, is no longer working well in newly nationalist areas, where political boundaries have become freshly important. It is also surprising to learn that even in what were advanced colonial areas, the map information is generally too poor for close tsetse control. Here again, native systems of agriculture, notably shifting cultivation, are continually outdating the map information where it is at all adequate, complicating the position of good situation reports and the accurate follow-up of tsetse distribution and change.

Dr. Nash is excellent on these matters, with his expert knowledge and easy manner of explanation. He estimates that if the fly could be put under control, African cattle could be more than doubled and massive present protein shortages met without much difficulty. This in turn would greatly relieve the direct pressure on game. On the other hand, it would be likely greatly to increase the pressure on game reserves and other sanctuary systems.

Neill, Wilfrid T. (1969). *The Geography of Life*. Columbia University Press, New York and London. 480 pp. \$ 12.95, Sh. 117/–.

This is one of the first books to seek a synthesis of the modern views of biogeographic principles in readable form. The author's attitude is interdisciplinary and quite informal. He was once a zoology professor, has long devoted his talents to writing on biogeographic themes. This handsomely produced volume, on a high quality paper seldom seen these days, is his *magnum opus*. The illustrations are well chosen and varied, but suffer sometimes from being too small on the page or – rather often – too contrasted. (e.g. pp. 246, 399). However, the overall effect is pleasant, the line of thought stimulating.

An introduction to the scope of biogeography emphasises the extraordinary, seemingly eccentric distribution and regional performance of many forms of animal and plant life. The author poses his questions this way:

"Why do the really gigantic land tortoises live only on remote little islands in the Pacific and Indian Oceans? Why does temperate South America have a vast area of grassland comparable to our North American prairie, yet have no herds of grazing animals except introduced cattle? The problems of biogeography are fascinating. The answers are even more so as we shall discover" (p. 9).

The remaining 400 pages of Dr. Neill's book set about discovering these and many other answers, adequately documented and well argued.

The first effect is slightly less complete than the comprehensive ambition implied in Dr. Neill's title "The Geography of Life". A more exact description might be "Biogeography and the Living World: Treatments of a Theme". But that would be, in a sense, to look a gift orchid in the mouth. For this book is rich, even exotic, in good points and good ideas, the overall effect being to enlarge our total or yet incomplete understanding of many hitherto neglected aspects of distribution, climate, topography, chance and much else in determining the world patterns of life. Again and again the conservationist finds clues to the factors which delimit our problems, inhibiting often the solution of them – even making some solutions seem hopelessly remote in the face of the powers vested in the world within the universe, and with the flux of time, quite apart from the post-Pleistocene destruction exploits of the human race, which appear almost insignificant at times against these biogeographical facts.

Nelson, J. G. ed. (1970). *Canadian Parks in Perspective*. Harvest House, Quebec. 343 pp. text figs. \$ 3.50 in paper. \$ 5.95 in cloth.

Professors in geography are coming very much to the front in some aspects of conservation literature lately, and this is one of several recent books from such a chair. The author is at the Canadian University of Calgary. He produced this handy volume out of an international conference there in 1968. Twenty papers cover pretty well every aspect of practical "parking" in North America; basically Canada, but drawing also in the adjacent U.S.A.

Professor Cowan's contribution on the role of ecology in the parks, is of special importance. But the general level is high throughout. Insofar as there is any general common tone or approach, it comes from the continent's tradition of the "wilderness".

The Canadian Park system, nearly a century old, is well conceived and strongly supported, but it is under pressure from the increasing demand for the extension of the human recreational role. More and more people there are demanding unlimited access, and in doing so are threatening the Parks' parallel functions as sanctuaries for nature protection and scientific research. Such park pleasures as horse riding, track-hiking, and camping have long satisfied the public's demands without significantly disturbing the total park setting. But new trends like motor tourism, and now snowmobiles, make much bigger demands. These problems are not peculiar to Canada, but they are peculiarly well-put in this book. The striking of a balance between these growing demands and the other obligations of park conservation present more major headaches, now and for the future. This volume is no asprin, but it offers some valuable suggestions for long-term treatment and thorough analysis of the situation as a whole. (Proceedings of the Conference organized by the National and Provincial Parks Association of Canada, and the University of Calgary, held at Calgary in October 1968, are available in two volumes under the title *The Canadian National Parks: today and tomorrow*. Editors were J. G. Nelson and R. C. Scace. The illustrated two-volume publication sells for \$ 12.00 and may be ordered from Dr. J. G. Nelson, Professor of Geology and Vice Dean, Faculty of Arts and Sciences, The University of Calgary, Calgary 44, Alberta, Canada.).

Schenkel, R. and Schenkel-Hulliger, L. (1969). *Ecology and Behaviour of the Black Rhinoceros (*Diceros bicornis* L.)*. A field study. Mammalia Depicta Monographs, Verlag Paul Parey, Hamburg. 104 pp., 26 figs., 7 tabs., Price DM 28.– or \$ 7.–

The book summarizes the results of an ecological and behavioural study of the black rhinoceros in an area of the Tsavo National Park East that was conducted over a total period of some eight months between January 1963 and October 1966. The principal objective was to determine how the rhinoceros population was reacting to the vegetation changes caused by elephant depredations and bush fires. The authors conclude that their study population of rhinoceroses is presently healthy and reproduction is adequate but that further degradation of the habitat could have serious consequences. They recommend continuing studies and analyses of elephant and rhinoceros populations and vegetative changes, and the establishment of a pilot management area in which elephant populations would be maintained at a low figure. The second half of the book contains a wealth of detailed information on the sociology and behaviour of the rhinoceros.

C. H.