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Viewpoint

Biosphere Reserves

Unesco's Man and the Biosphere Programme (MAB) is scheduled to take another long forward step this month when the International Coordinating Council considers a programme to designate the world's first Biosphere Reserves.

These special areas will be set aside under MAB Project 8, "Conservation of Natural Areas and the Genetic Resources They Contain". IUCN is directly involved in this project, which is related to the Union's historic mission and which ties in with projects dealing with the protection of endangered species, wetlands, national parks, rain forests, and other natural areas.

An Expert Panel, meeting in Morges last September (see Bulletin Vol. 4, No. 10, p. 42), agreed that the broad objective of this project should be to protect examples of all of the biomes of the world.

These would, (1) conserve for present and future human needs the diversity and integrity of biotic communities of plants and animals within natural ecosystems, and safeguard the genetic diversity of species on which their continuing evolution depends; (2) provide areas for ecological and environmental research including, particularly, base line studies, both within and adjacent to such reserves; and (3) provide facilities for education.

Biosphere reserves may be viewed as an approach to the problem of maintaining the integrity of biological support systems for man and nature throughout the whole biosphere. This involves conservation and restoration and, of course, the acquisition of greater knowledge through which man's management of the domestic and wild countryside may be improved.

First, the magnitude of the task must be assessed by comparing the present status of conservation of natural areas of each country with a comprehensive inventory. Some biomes are adequately protected, of course, but major segments throughout the world are given little, if any, protection; the inventory would be a first step in identifying these.

As the work of data collection progresses certain areas will be identified as having special significance. Under the programme these are to be established as biosphere reserves and perhaps 200 areas eventually would comprise a large, carefully protected world-wide network.

Biosphere reserves are not meant to be a substitute for national parks and equivalent reserves, but rather a supplement and extension of them. Biosphere reserves may coincide with or incorporate national parks or equivalent reserves within their boundaries but they could also encompass areas which do not conform to the IUCN definition of National Parks. They may be examples of semi-natural ecosystems, or landscapes maintained

by long-established land-use practices. Some should also have potential for restoration to near natural conditions.

Close attention must be given to planning of these reserves. All should have "core" areas, protected by "buffer zones". Use would be carefully planned and controlled according to the nature and capacity of the area to withstand it and, consistent with the primary objective, conservation, it would normally be confined to the "buffer zone". The concept recognizes that successful stewardship must depend on adequate control on the uses of surrounding lands and waters.

Biosphere reserves will constitute an operating network, linked by international understanding on purposes, standards and exchange of information. As such, it will be a grand example of conservation at its best. There are a host of reasons why this activity is important. Many are obvious and certainly need no explanation here. Others are not so well understood. Forests, fisheries, soil, waters and even wildlife and unspoiled natural landscapes are often thought worth protecting because of their direct use in human enterprises. In contrast, however, are the more subtle requirements for healthy ecosystem functioning, the need for diversity in species and habitats, and the continuing operation of evolutionary processes by which the earth's myriad species adapt to the changing world.

Scientists, of course, appreciate these and other values in the natural world, and have devoted considerable efforts toward extending their knowledge and understanding. But despite extensive research the surface has only been scratched. No doubt a major reason why greater effort has not been given to these basic studies is the difficulty the public has in seeing their relationship to everyday life. Mankind, as a whole, generally has given little thought to these matters, assuming that the world was vast and its resources without limit, and that there was no need for concern.

We know now that there are limits. We know as well that man's unbridled use — and abuse — of the earth has reduced the choices available to him. Unesco's "Biosphere Conference" in 1968 brought the whole matter of world degradation into focus — for the first time on the UN level. It was clear that past exploitation of resources had not been wise, and that it was high time for the world to plan a sensible management programme. Unesco's MAB Programme, one of the major developments from that historic meeting, is the instrument prepared to develop a scientific basis for just that kind of management programme.

Surely, few international scientific activities can rank close to this one in its long-range importance, and within the compass of MAB as a whole the Biosphere Reserve programme is of major significance. We take this occasion to encourage all nations to follow the welcome lead already announced by the Soviet Union and the USA to establish, through MAB National Committees, or on their own, reserves that will make the basic structure of this exciting concept an early reality.

IUCN/WWF call for measures to save Africa's elephants

Drastic measures to stamp out elephant poaching and illegal traffic in ivory have been called for by the World Wildlife Fund and IUCN.

Unless action is taken urgently the unprecedented rate in the decline in Africa's elephant populations will lead to their virtual extinction, and therefore the loss of a world resource of inestimable economic, scientific and aesthetic value.

The principle reasons for the decline are clearly illegal hunting, and expanding agriculture and other development which reduce the space for elephants. Drought has been a contributing cause.

Continued on next page

Nepal joins IUCN

In a letter dated 7 August, Nepal's Minister for Foreign Affairs advised the Director General of IUCN that Nepal adheres to the Statutes of the Union, thus becoming the 38th State Member, and the 4th to join during 1974.

Poaching has now become the major factor and has been greatly intensified recently because of a sharp increase in the value of ivory, which has become a speculative commodity, a hedge against inflation, and a method of illegally transferring funds from one country to another.

Controls on legal and illegal hunting and of ivory exports have been instituted in various countries but these have not yet proved effective. With little chance of being caught, and the imposition of minimal penalties if they are, poachers have enjoyed "a field day". Subornation of those charged with enforcing controls as well as of senior officials and politicians has been reported.

The loss of the magnificent herds of elephants would be tragic. Their importance to conservation is beyond question. They have a major influence on habitats, which affects other animals, and they are one of the principal attractions for tourists, who contribute substantial amounts to the revenues of African countries. In addition they are of great scientific interest.

The pressures on the elephants have led to apparently conflicting reports of their scarcity and over-abundance. This is because, while they have disappeared from some places, herds have concentrated in national parks and other conservation areas where, in many cases, the carrying capacity of the habitat cannot support their increased numbers. Traditional herd movements, which were nature's way of meeting this problem, are no longer possible because of human pressures around the reserves, in which the excessive elephant population then starts to destroy the habitat.

Elephants have always been a source of ivory, meat, hides and other products, and, as long as they exist in sufficient numbers, there is no reason why they cannot continue to be utilised for these purposes under scientifically-devised management schemes. IUCN experts believe that in particular situations management is necessary to prevent undue habitat destruction and ensure the health of the herds. This involves culling a predetermined number of animals. When carried out under strictly-controlled official management such culling can constitute an important economic and commercial potential for the countries involved, since all the animal products can be used.

The killing of thousands of animals by poachers, who hack out the ivory and leave the carcass to rot, is wanton destruction for private gain to the detriment of the community as a whole.

The World Wildlife Fund and IUCN have actively supported projects to deal with the elephant problem for many years in Botswana, Ethiopia, Kenya, Tanzania, and Zambia. These have involved antipoaching equipment and improvement of the management of wildlife and conservation areas. The following policies are now recommended:

1. Strict official control, both national and international, of the possession and sale of raw ivory;
2. Strict management of sport hunting;
3. Improved antipoaching measures;
4. Intensive public education and information programmes on the role of elephants and other wildlife, with a special effort to make poaching socially reprehensible as well as illegal.

The World Wildlife Fund and IUCN appeal to all governments and agencies concerned, and to the public at large, to take action to stamp out illegal killing of elephants and the traffic in ivory.

IUCN membership continues to grow

Since the Banff General Assembly, 9 new State members have joined (bringing the total to 38), as well as 43 new organizational members (making 337 in all).

The organizational members are:

Governmental Agency members	104
Non-governmental National	
Organizational Members	202
Non-governmental International	
Organizational Members	19
Affiliates (non-voting)	12

Membership now covers 94 countries geographically distributed as:

Africa	23
Latin America	13
North America	3
Asia and Oceania	28
Europe	27

In this connection it is noted that 21 of the 23 African countries represented are covered in IUCN membership by State members or by Governmental Agency members; 2 of the 3 North American countries; 8 of the 13 Latin American countries; 22 of the 28 countries in Asia and Oceania; and 25 of the 27 European countries.

Difficulties always arise in classifying nations according to their degree of industrialization but, following the usual United Nations breakdown, approximately two-thirds of IUCN State members are from the non-industrial group. About half of the Agency members are in each group.

Almost three-quarters of the non-governmental members are from Europe (total 83) and North America (total 66).

Walia ibex increases

The Walia ibex has increased in numbers to nearly 200 in Ethiopia's Simien Mountains National Park but its future is still threatened by habitat destruction. The increase is attributed mainly to improved control over poaching.

Programme Activities

National parks system for East Africa to be explored

IUCN and UNEP are sponsoring a regional meeting next month to explore the formation of a coordinated system of national parks and reserves in eastern Africa. With agreement from the Tanzania National Parks authorities, the meeting will be held at Seronera Lodge in the Serengeti National Park, 14-19 October.

Objective of the meeting is to promote the conservation of representative samples of the biomes of the region, to facilitate an exchange of views and information between national park authorities and to foster cooperation between them.

Participation will be by invitation and it is intended that the total number will not exceed 30.

Invitations are being extended to the national parks authorities of Botswana, Ethiopia, Kenya, Malawi, Somalia, Sudan, Tanzania, Uganda, and Zambia to send representatives to the meeting.

The Second World Conference on National Parks (Grand Teton, USA, September 1972) urged that regional groupings of nations should establish mechanisms for

Tunisia ratifies Convention on trade in endangered species

Tunisia has deposited instruments of ratification with the Swiss Government, thus becoming the fourth nation to take this definitive step; adherence by 10 States is required for the Convention to enter into force.

collective action to establish regional systems of national parks and other protected areas. The same Conference also called on governments to widen the coverage of protected areas so as to ensure that representative samples of the various types of natural biomes and ecosystems are conserved in a coordinated system of national parks and protected areas.

The present systems of parks and reserves in eastern Africa have tended to emphasize those biomes which are the habitat of spectacular wildlife. The time is now opportune to explore the possibility of widening this coverage.

As part of the preparation for the meeting data is being gathered in order to assess the existing parks and reserves in relations to their coverage of the biomes of the region and to identify and assess natural areas which are as yet unprotected or inadequately protected. It is proposed to discuss this assessment at the meeting.

The meeting is being organized by IUCN/WWF Consultant, Dr. Hugh F. Lamprey. It is being supported financially by the Fund of UNEP and the World Wildlife Fund.

World Park Conference proceedings in French

Proceedings of the Second World Conference on National Parks has now been published in a French edition. The 557-page book may be ordered from the Secretariat at Morges. Price for the book, in hard covers, is \$10. The same book is being issued in Spanish. The English edition was issued in June.

Conservation Notes

Norway becomes party to Wetlands Convention

Norway has signed the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar 1971), without reservation as to ratification. It thus became the seventh nation to sign the Convention and the second to become a party to it.

At the time of signing Norway designated a wetland located in the Akerovika to be included in the List of Wetlands of International Importance established under the terms of the Convention.

The Convention will enter into force four months after seven states have become parties by signature without reservation as to ratification, by ratification, or by accession.

Post graduate course in conservation of nature and natural resources

For the first time in its 27 years, the Graduate School of the Tropical Centre for Research and Training for Agriculture and Related Sciences (CATIE) at Turrialba, Costa Rica (formerly of the Inter-American Institute of Agricultural Sciences of the Organization of American States) has offered a graduate course for credit on conservation of nature and natural resources. Thirty-seven students from 10 countries were enrolled, coming from the training centres of Turrialba and the universities of San José and Heredia, or government institutions. The course was of the intensive type with five lecture and discussion hours a week, three field trips (Volcan Poás, Tapantí Protective Forest, and Reventazón Nature Trail) and term papers.

The course was conducted by IUCN's Director General, Dr. Gerardo Budowski, who was in Latin America on home leave during the period. Mario Boza, Head of the Costa Rican National Park Service, and Alvaro Ugaldó, his Deputy, were guest lecturers.

US importer forfeits shoes made from endangered crocodile hides

Two shoe importers in the USA have transferred to the United States Government their ownership interest in over 390 pairs of imported men's crocodile shoes, according to the US Fish and Wildlife Service.

This action was taken in settlement of an administrative civil penalty action initiated against the firms by the Fish and Wildlife Service, under authority of the Endangered Species Conservation Act of 1969. Both the 1969 Act and a successor law passed in 1973 prohibit the importation of any species on the list of endangered species maintained by the Secretary of the Interior. The firms were charged with importing shoes made from the Nile crocodile, which is listed as an endangered species.

They were destined for retail outlets in the United States with an average price tag estimated by the importers of \$90 a pair.

There are 27 species and subspecies of crocodiles in the world. Six are named on the Secretary of the Interior's List of Endangered Species. Commercial processing of these hides is legal in Europe. Some countries in Latin America, Africa, and Asia have recently outlawed or limited commercial harvest of crocodilians. Others are investigating regulation of the harvest.

Wildlife research facilities

The Hostes Nicolle Institute of Wildlife Research, which is located in the Sengwa research area of the Chirisa Game Reserve in Rhodesia, is now offering facilities for long-term ecological and behavioural research, particularly with reference to large mammals and their habitats. Ample laboratory facilities and accommodations are available. Applicants should state their planned field of study in requests to: The Director, National Parks and Wild Life Management, P.O. Box 8365, Causeway, Rhodesia.

Protection urged for Baltic seals

Experts from the Baltic countries of Denmark, Finland, the Federal Republic of Germany, and Sweden, with associated scientists from Canada, the Netherlands and the UK, have called for a 3-point programme to halt the rapid decline of marine mammals, seals in particular, in the Baltic Sea area.

The group of scientists met at Lidingö, Sweden, 4-6 June, with the Statens Naturvårdsverk as host to the symposium.

The recommended programme calls for (1) establishment by the seven Baltic states of a system of sanctuaries, especially in the main breeding areas of the three species of seals (grey seal, ringed seal and common seal *Phoca vitulina*); (2) intensified scientific research under a working group of scientists from the countries concerned; and (3) stricter hunting regulations, including abolition of bounty.

Under the research programme, the task of the Working Group would be to coordinate research and exchange data on Baltic marine mammals, to report on the status of their populations, and to make recommendations for their conservation. Methods of population assessment and requirements for biological sampling were outlined by the group.

In operation, this programme will complement the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki 1974) and the Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts (Gdansk 1973).

US plans destruction of "Agent Orange"

In March IUCN was advised by the US Environmental Protection Agency that the possible sale of several million gallons of the herbicide "Agent Orange", for use in South America, had been deferred. Earlier, IUCN had asked the US Government to take action to prohibit export of the highly-toxic mixture. (See Bulletin, Vol. 5, No. 3, p. 11.)

IUCN has received word from the US Council on Environmental Quality that the Air Force, which has custody of the herbicide, currently proposes to destroy the stockpile by incineration.

Book Reviews

Young, E. (Ed.) (1973). *The Capture and Care of Wild Animals*. Capetown and Pretoria: Human & Rousseau. 224 pp.

This book is the result of a project of the South Africa Nature Foundation, an affiliate of the World Wildlife Fund. It is a compilation of papers by 18 veterinary, medical and wildlife experts. The compilation was prepared by the Wildlife Group of the South African Veterinary Association and the Southern African Wildlife Management Association. The editor, Dr. Young, is an outstanding wildlife veterinarian now employed in the Kruger National Park.

South African wildlife and veterinary experts have long led the field in the capture, transportation and relocation of large mammals, and it is unfortunate that their work is often unknown in the rest of Africa. This book deserves wide distribution since it would go far toward correcting this problem. The book is divided into four sections covering respectively: chemical immobilization; mechanical capture; transport, accommodation and nutrition; and post capture complications and treatment. It is well illustrated with diagrams, color and black-and-white photographs. It should prove to be an essential handbook for anyone working with African wildlife.

Raymond F. Dasmann

Müller, Paul (1973). *The dispersal centres of terrestrial vertebrates in the Neotropical realm*. The Hague: Dr. W. Junk B. V., Biogeographica Vol. II, 250 pp., 101 figs., 2 photos.

This is a comprehensive treatment of the biogeography of the terrestrial vertebrate fauna of the Neotropical realm with some reference to other animal groups. The author maps and describes 40 separate faunal 'dispersal centres' in Latin America. Dispersal centres are worked out by plotting the breeding ranges of species and subspecies and ascertaining those areas where an unusually large number of ranges overlap. These centres are not necessarily centres of origin for the taxa involved, although they may be, but are centres of evolution for species and subspecies. Since most subspecies are confined to a single dispersal centre, the centre will serve over time as the locale within which subspecies may evolve into separate species.

Although the author dismisses the biotic province concept, his dispersal centres in fact represent core areas, which any meaningful mapping of biotic provinces must take into account. They also serve to illustrate further criteria to be considered in establishing a comprehensive network of national parks or biosphere reserves.

R. F. Dasmann

Meagher, Margaret Mary (1973). *The bison of Yellowstone National Park*. U.S. Government Printing Office, Washington, DC. \$2.25, 161 pp.

Dr. Margaret Meagher, a research biologist for the U.S. National Park Service, apparently was the right person in the right place at the right time to produce this book on the bison of Yellowstone National Park, the first volume in a long-awaited scientific monograph series. Her seven years of work on this species back up a publication that is both intellectually comprehensive and pleasant to read. This research report was accepted as a doctoral dissertation by the University of California.

This paperback book and its subject are good examples of the type of research and published presentation needed in national parks and reserves throughout the world. The book is meant to provide a basis for park management, and for evaluation of the importance of this particular bison population. Thirty-eight black and white photographs and maps clearly illustrate the animal, the study area, and such activities as calving, rut, movements and the use of forage areas and thermal areas in the park. Its additional value as a source of interpretive information is excellent.

Bruce E. Weber

Proctor, Michael and Yeo, Peter (1973). *The Pollination of Flowers*. The New Naturalist.

London: Collins, 418 pp. with 200 photographs (19 in colour) and 134 line drawings. \$4.00.

Here is an extremely detailed account of the whole subject of pollination. Much background material from adjacent fields is also included to introduce various topics, for example on the fossil record and the origin of the angiosperms.

The 200 photographs are superb, many of the line drawings are less successful; caricature is an appropriate art when the pen is chosen in preference to the camera and could have been employed here with advantage. None of the illustrations has a scale.

It has to be said that the book is not easy to read. The language lacks fluency and generalizations tend to get buried in a mass of complex detail. For instance the powerful concept of syndromes of characters, which are convergent adaptations to a particular class of pollinator (such as nocturnal, sour-milk-smelling blossoms for bats), comes over less clearly than in the other recent books on the subject. There is a lack of balance; pollination in grasses and sedges gets two pages whilst orchid pollination is described in enormous detail (more than a chapter), and that in figs gets five pages. The New Naturalist masthead is subtitled 'A Survey of British Natural History', so throughout we are treated to the often quaint British vernacular names, but the book seems miscast for the series, for after all *Ficus* is a rather uncommon exotic to the British Isles, and bird and bat pollination are unknown there. Readers of this journal need not therefore be put off, they will not be buying an account for the interested but knowledgeable layman on pollination of flowers in Britain - which is surely what the inclusion in this series implies. What they will be getting is the most comprehensive account yet published on the whole subject, squeezed but not much distorted by the series concept - and of course a selection of wonderful pictures.

What we still lack, and perhaps the time is not ripe, is the bird's eye view, generalizations saliently expressed and not lost in the detail.

T. C. Whitmore

Mossman, Archie S. (1974). *Conservation*. New York and London: Intext Educational Publishers. 196 pp., illustrated.

This is a brief book, 162 text pages, covering conservation of natural resources. For some reason it appears under two different titles, the paperback edition being called *Towards Conservation*, although it has the same content as the cloth-bound edition.

Conservation is defined as the "physical and mental utilization of resources that leaves open or creates a maximum number and kind of possible uses for the future". Following this definition, the author devotes attention to some broad principles of ecology, and then in the six remaining chapters covers erosion, land use, weather modification, wildlife, aquatic resources and life quality. The treatment of each of these topics is necessarily cursory. Air pollution, for example, is discussed under weather modification and occupies three brief pages; forestry occupies 2½ pages.

The book will be useful for beginning courses where the teacher wants only brief subject matter followed by a list of discussion topics with appropriate references for further reading. Illustrative material is drawn from the author's field experiences in Rhodesia, Zambia, Malawi, East Africa and the United States; however the emphasis is on American conservation problems.

R. F. Dasmann

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