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Comment

Hard years ahead

The next 25 years, 1976-2000, may justly be regarded as conservation's critical quarter century. During this period, the tasks facing IUCN and its member organizations will grow progressively more difficult. They will involve unpleasant choices and demand a tactical flexibility and clarity of thought that in the past the conservation movement has not always shown.

During this period, the pressure of world population on the environment will grow much more severe. The trend toward greater urbanization, unless it is deliberately reversed, could result in still greater environmental disruption. Pressure on living resources will mount enormously.

As a result the prospects for conservation will be much the poorer. Species diversity will be further reduced, and ecosystem integrity more severely undermined. The most pressing economic needs will be shared by still greater numbers of people; and in the face of their just demand for food and jobs, governments will weaken further in their defence of their people's biological heritage.

How should we respond to this situation? First, by a much more rigorous definition of priorities. The programme procedure adopted by IUCN's 1976-1978 Programme, is a means of achieving this, because by demanding that the region or subject be examined as a whole it facilitates the identification of those species and areas most in need of conservation action.

Second, by a much more rigorous assessment of feasibility. Projects are likely to fail or to be extremely expensive or both if insufficient account is taken of the social and economic circumstances of the people most affected by them. In some areas these may be

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Costa Rica saves unique rain forest

More than 300 sq km of the Corcovado Basin on the Osa Peninsula of Costa Rica's Pacific coast has been decreed a national biological reserve by Daniel Oduber, President of Costa Rica. The reserve is now the largest protected area of tropical wet forest in Central America.

Described by the Tropical Science Centre in Costa Rica as "one of the biologically richest and most visually impressive tropical rain forest areas still unaffected by human settlement in Costa Rica", Corcovado is one of the most diverse tropical areas for its size in America. Many thousands of plant and animal species live within 20 or more ecologically distinct but closely linked natural communities.

"Although there are larger areas of undisturbed Tropical Wet Forest life zone in Central and South America," writes the Centre, "the rare combination and variety of still intact primary ecosystems found in the modest extent of the Corcovado drainage is unique to Costa Rica and perhaps to all tropical America."

Within the reserve are sand beaches, rocky intertidal zones, tidal estuaries, freshwater lagoons, and undisturbed tropical wet forest, both lowland and lower montane. A number of the 287 bird species found on the Osa Peninsula occur in no other place in the world. The scarlet macaw, whose population has declined drastically in recent years, is now believed to occur in significant numbers only on the Osa Peninsula. The harpy eagle, the world's largest eagle, is also found there.

Mammals and reptiles found in the reserve include jaguar, ocelot, puma, margay, giant anteater, tapir, caiman and American crocodile. Scientists have also observed so far 42 species of frog, 19 of lizard, more than 30 bat species, as well as four species of monkey—including the rare titi monkey. Also found in the reserve are two species of sloth, kinkajous, prehensile-tailed porcupines, peccaries and coatis. Four species of turtle, including the endangered Pacific green and hawksbill, nest on the Corcovado beaches.

The Corcovado Basin is believed large and environmentally diverse enough to provide full territories and assure reproductive success in populations of even the

largest and most wide-ranging animals, the rarest plants, including trees over 50 m, and the most sparsely distributed representatives of very specialized species of insect, amphibian, bird and mammal. Its management as a national biological reserve will provide Costa Rica with scientific, educational and long-lasting economic benefits. The Tropical Science Centre believes that revenues from well controlled scientific research and tourism, both local and foreign, are likely to be greater than the short-lived income to be derived from destructive lumbering, livestock raising, or subsistence farming.

The soils of Corcovado are so acid and poor that, in the judgement of the Tropical Science Centre, "except on the best, well-drained alluvial terraces of the plain, they will not long sustain either crop or cattle production." In addition, "the excessively humid atmospheric conditions directly restrict the choice of adaptable crops and greatly increase the technological and economic costs of all agricultural production." More than a half of the Corcovado lowland has imperfect to extremely poor natural drainage. In the still larger upland area, because the terrain is so steep and broken, "not even sustained-yield forest production for timber would be economically profitable on more than a small fraction" of the land, writes the Tropical Science Centre.

"Thus, from an objective economic viewpoint," it concludes, "setting aside the Corcovado basin as a managed nature reserve would not significantly detract from the nation's overall development potential in either agriculture or forestry. It would, however, make a major contribution to *balanced* national development by preserving as an integral part of the Costa Rican cultural and biological heritage, the last remaining large, intact

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IUCN Programme

The Programme adopted by IUCN's 12th General Assembly at N'Sele, Zaire, was published in the *Bulletin* in November 1975. A systematic report on its progress begins here.

In this issue we report on programmes in the South Pacific, on critical marine habitats and on threatened plants. The remainder of the programmes will be reported on in subsequent issues, and each will be brought up to date and amplified when appropriate.

For easy reference, the programmes are as follows:

Regional

- East Africa
- Central America
- West Africa
- South Pacific
- Northern and western Europe
- South East Asia

National

- Tunisia

IUCN/WWF front-line

- Operation Tiger
- Tropical Rain Forest campaign

Conservation of terrestrial and freshwater areas (where not included under regional or national programmes)

Marine conservation

Conservation of plants

Conservation of selected animal groups

International conventions

Ecological guidelines

Information on the state of world conservation

Environmental education and public awareness

Environmental policy, law and administration

Conceptual work

Other

South Pacific

Background

Major IUCN involvement in the South Pacific dates back to preparations for the Noumea Conference held in 1971. The outcome of this conference was an association of IUCN with the South Pacific Commission in matters concerning conservation in the South Pacific and the development of a closer relation of IUCN with various island governments.

IUCN was requested by the Government of Western Samoa, with support from UNDAT (United Nations Development Advisory Team for the South Pacific), to carry out a survey of potential national parks in 1974.

IUCN was also asked to prepare a draft Convention for conservation in the South Pacific, done in January 1975.

In February 1975, IUCN and the Government of New Zealand sponsored

the South Pacific Conference on National Parks and Reserves held in Wellington, New Zealand, which gave added impetus to the IUCN regional involvement and led to inclusion of the South Pacific regional survey/workshop in the UNEP contract with IUCN.

The above developments led to the formulation of various action projects to which IUCN/WWF have been asked to contribute. These include:

a) Request for assistance from Gilbert and Ellice Islands in drafting legislation for wildlife protection (provided in 1975), and in providing a warden and various facilities to protect breeding bird colonies in the Line Islands. This is being explored with the UK Government.

b) Request for assistance from Kingdom of Tonga in establishing more effective protection for their system of reserves. This is being considered for inclusion in the IUCN/WWF 1976 programme.

c) Proclamation at the Tokyo Marine Parks Conference of Manuae Atoll in the Cook Islands as a World Park/Island for Science. Request for assistance from Cook Islands in developing Manuae as a world park or equivalent. Request for assistance from Cook Island for salaries of conservation director and funds for conservation programme. These are being considered in relation to finding means for providing the required assistance.

d) Request for assistance from Solomon Islands with draft conservation legislation.

e) Verbal requests for assistance in implementing park plans from Fiji Islands and Western Samoa. These have yet to be formulated.

Programme 1975-76

Components—three major IUCN sub-programmes or themes to be integrated:

a) South Pacific regional survey and workshop to establish an integrated series of parks and reserves.

b) Critical marine habitats project.

c) Eco-development based on local tradition/culture.

Action—surveys and investigations to be undertaken:

a) Survey to identify protected areas and those in need of protection.

b) Preparation of materials on critical marine habitats and on-site investigations of specific areas, e.g., Manuae.

c) Preparation of materials on traditional uses, customary rights in relation to conservation/eco-development.

d) Development of legal/political concepts relating to above (World Park, South Pacific Convention, Islands for Science).

These surveys and investigations will converge at the Regional Symposium on

Nature Conservation in the South Pacific and the meeting on the Convention on Conservation in the South Pacific Region in Apia, Western Samoa, in June 1976. From this will arise specific recommendations for future action.

Marine conservation

Principal Objectives

a) To identify and describe critical marine habitats with particular attention to those most urgently in need of conservation action and for which such action is feasible.

b) To develop criteria and guidelines for the selection and management of protected marine areas and for the conservation of marine species.

c) To formulate action plans for conservation of critical marine habitats and species, and to work with governments or international agencies to implement them.

d) To develop the means by which marine conservation may be integrated into a regional pattern of eco-development, taking into account traditional uses of the sea and building from local customs and knowledge.

Action taken 1974-75

Preparation of background papers and other materials

a) Listing of world marine parks and reserves by Mona Björklund. Published 1974, *Environmental Conservation* 1(3): 205-224.

b) Preparation of a preliminary classification of coastal and marine environments by G. Carleton Ray. IUCN Occasional Paper No. 14, 1975.

c) Preparation of criteria and guidelines for selection and conservation of marine parks and reserves by G. Carleton Ray.

d) Preparation of a preliminary list of critical marine habitats and the status of their conservation by M. Björklund and G. Carleton Ray.

e) Preparation of a list of personnel active in marine conservation by M. Björklund and G. Carleton Ray.

f) Preparation of an annotated bibliography on marine conservation by G. Carleton Ray.

Conferences, workshops and surveys

a) Conferences and Workshops

South Pacific Conference on National Parks and Reserves, Wellington, New Zealand, February 1975.

Marine Parks and Reserves in the Northern Indian Ocean, Tehran, Iran, March 1975.

International Conference on Marine Parks and Reserves, Tokyo, May 1975.

b) Surveys

- Reconnaissance of the Red Sea by Rupert Ormond, February 1975.
- Survey of parts of the Persian Gulf by Erik Carp, February-March 1975.
- Brief survey of five island marine sites by M. G. McCormick.
- Survey of existing and potential marine parks and reserves in the Mediterranean by Hédia Baccar.
- Survey of existing and potential marine parks and reserves in the northern Indian Ocean.
- Survey of existing and potential national parks and reserves in the South Pacific by Arthur Lyon Dahl. Initiated in 1975.

Action projects derived from conferences or surveys

- a) Proclamation at Tokyo Conference of Manuae Atoll, Cook Islands, as World Park and Island for Science.
- b) Request for assistance in delimiting reserves on Tonga.
- c) Request for assistance in protecting marine bird life in Gilbert and Ellice Islands.

Proposals for 1976

- a) Formulation of and action on South Pacific programme as a major activity in the Marine Programme for 1976.
 - b) At the request of ALECSO, a survey of critical marine habitats and of proposed parks and reserves in the Red Sea. To be explored at Jeddah II meeting, January 1976.
 - c) Follow-up of Tehran conference and Indian Ocean survey—development of action projects.
 - d) Follow-up on Mediterranean survey—development of action projects.
 - e) Development of front-line programme for WWF appeal in 1977-79.
- In association with and as a means toward these activities, the following actions will be taken:
- a) Strengthening of Critical Marine Habitats Project Group.
 - b) Formation of Critical Marine Habitats Working Group within IUCN.
 - c) Search for a locus for training personnel in marine conservation.
 - d) Expansion of lists of critical marine habitats, personnel, and bibliography.

Related Projects

It should be noted that a number of marine projects were adopted for the 1976 programme of IUCN/WWF. These are not necessarily related to the priorities of the IUCN marine programme. The formation of a Critical Marine Habitats Working Group will help to integrate these projects within the overall programme, and ensure that future projects are developed with a view to the priorities of the programme.

Current projects now within the marine programme will be described in the next issue of the *Bulletin*.

Plant conservation

The conservation of plants programme is the responsibility of the Committee on Threatened Plants (see *Bulletin*, Vol. 5, p 23). A secretariat has been established at the Royal Botanic Gardens, Kew, under the leadership of Mr Grenville Lucas, and it has begun work on the first of the programmes's three elements.

These are: (a) survey and evaluation, in which an Index of threatened species is compiled, and centres of endemism, particularly those most at risk, identified; (b) action, in which the most appropriate action for each case is identified and developed as a project; (c) public awareness, in which public support and concern for threatened plants is aroused.

The Threatened Plants Committee (TPC) has three principal arms:

1. *Regional groups*: Throughout the world, botanists, horticulturists, ecologists and others with special interest in and knowledge of their regional floras are being asked to become associated with the work of the Committee, and to form regional subcommittees which will take special responsibility for identifying threats to floras, plant groups and individual species in their own areas. Part of their task will be to document adverse changes affecting floras and species, and to prepare recommendations for minimizing their effects through governmental or other action. They may also be involved in protection and rescue operations.

So far, four of these regional subcommittees have been set up: North America (Chairman, Dr Edward Ayensu), Europe (Chairman, Dr Max Walters), Middle East and North Africa (Chairman, Dr Loutfy Bulos), and Africa (through AETFAT, Association Etude Taxonomique Flore de l'Afrique Tropicale, Chairman, Prof. Amoyna). There are direct communications with the USSR; and in Latin America, where there are no regional subcommittees, communications are through country representatives.

2. *Specialist groups*: To complement the work of the regional TPC organization, panels are to be set up to handle the problems of special plant groups. Two have been set up so far (palms and tree ferns), and a third (orchids) is in formation. Some of these groups will have a taxonomic basis, and specialists will be invited accordingly; but it is anticipated that panels will be formed to deal with more comprehensive categories, based upon ecology or life form. Succulent enthusiasts and growers, through their own organization, IOS, have forged links with TPC, have set up a Conservation Committee, and have produced a code of conduct for their members.

3. *Institutional*: The third component of the TPC will be made up of botanic gardens, university departments, research institutes and other bodies with facilities and expertise to maintain threatened species in cultivation or in seed banks. Already the Food and Agriculture Organization of the UN is organizing a world-

wide network of plant genetic resource centres for husbanding cultivated species and some of their wild relatives. The aim now is to set up a complementary network to handle natural source plant material not already covered by the activities of the FAO system.

The enthusiasm with which university botany departments, botanic gardens and institutes have greeted the project bodes well for the future. Support has been pledged by the International Union of Forestry Research Organizations, the International Association of Botanic Gardens and the International Botanical Congress, both for the aims of conservation and for the Threatened Plant Committee in particular.

A conference at Kew, 2-6 September 1975, on "The Function of Living Plant Collections in Conservation and Conservation Oriented Research and Public Education" explored the potential of the botanic garden in conservation—the problems of propagation, cultivation and documentation, and the need for a network of gardens to cover all major plant zones in the world. Cooperation and a new sense of purpose at that meeting will ensure that the third arm is as strong and active as the other two. Here, too, the world list of endangered and threatened plants will provide guidelines for gardens in deciding what they can most usefully hold and propagate, particularly their own or similar climatically selected endangered species.

The index of threatened species is being assembled region by region. The first available is that for North America, which has already been compiled by the Smithsonian Institution. Through the Chairman of the North American regional subcommittee, the Smithsonian has put its computer programme and other information on the threatened plants of North America at the TPC's disposal.

The first major task of the TPC secretariat, in collaboration with the regional subcommittee for Europe, has been the compilation of a preliminary draft of rare and threatened species for all Europe except the USSR. The final version will be ready by September 1976.

The next index to be compiled will be that for the Middle East and North Africa. The speed with which the TPC is making progress with this formidable task shows that the world list is possible and within a reasonable time scale, and the pattern for future information gathering has been set.

It is expected that projects can begin to be identified from April 1976 onwards, and with their selection and development the action element of the conservation of plants programme will begin. The TPC is also looking at different national legislations on plants. The aim is to discover what plants are protected, and how, in different countries, beginning with those nations that have signed the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

The public awareness element of the programme will begin with the production of a book. Details will be given when the environmental education and public awareness programme is described next month.

News from Members

News from Members is a new section of the *Bulletin*. Its object is to provide members of IUCN with news about the activities of other members of IUCN. Its success will depend on membership participation, and we invite all members to send information which would be of interest to other members to Special Assistant for Membership, IUCN, 1110 Morges, Switzerland.

42nd State Member for IUCN

IUCN has been notified that the Government of Pakistan adheres to the IUCN Statutes and has decided to become a State member of the Union. Pakistan thus becomes IUCN's 42nd State member. The National Council for Conservation of Wildlife will serve as the agency responsible for liaison with IUCN for all membership matters.

OPTIMA

The Organization for the Phyto-Taxonomic Investigation of the Mediterranean Area, an international organizational member of IUCN, was founded in 1974 as an international association of all botanists interested in the Mediterranean area, ranging from Macaronesia to Belutchistan. Its purpose is not to carry out concrete research projects, but to encourage and assist scientific activities, and to improve contacts and cooperation between botanists working in the Mediterranean and colleagues interested in the area.

In line with this objective, the first meeting of OPTIMA was held 22-27 September 1975 at Heraklion, Crete, Greece, under the patronage of the Ministry of Culture and Sciences.

Zoologische Gesellschaft von 1850 Frankfurt a. M.

For the past two years the Zoological Society of 1858, Frankfurt, an IUCN national organizational member in the non-governmental category, has financed equipment and maintenance costs for 14 rangers in Tsavo National Park in Kenya to fight well-equipped and organized bands of ivory poachers. During this period 36 gangs of poachers have been arrested and 118 elephant tusks confiscated.

This support was contingent on the Kenya government's willingness to finance the project for at least another year, and that arrangement has now come into effect.

"Israel—Land and Nature"

The Society for the Protection of Nature in Israel, a national organizational member of IUCN in the non-governmental category, has announced the publication of a new English-language quarterly.

Articles are primarily translations and adaptations of material which has appeared in *Teva va-Aretz*, and all are based on original research and observation.

The price of *Israel—Land and Nature* is US\$ 10 per year, including air mail postage. It can be obtained by writing to the Society for the Protection of Nature in Israel, 4 Hashfela Street, Tel-Aviv, Israel.

Order of the Golden Ark

Four leading world conservationists have been honoured by the award of the Order of the Golden Ark, which was created by HRH The Prince of the Netherlands, President of WWF, to honour special services to conservation of flora and fauna.

They are: Dr J. S. Owen (UK), Dr Mervyn Cowie (UK), Professor Dr M. F. Mörzer Bruyns (Netherlands) and Mrs Christiane Linet (Belgium).

Ultimate responsibility for lion marmosets

Among the Resolutions passed by IUCN's 12th General Assembly in Kinshasa was a resolution recognizing that the three lion marmosets of Brazil, *Leontopithecus rosalia*, *L. chrysomelas*, and *L. chrysopygus*, had come "to symbolize the threats to wildlife and the efforts to preserve species, especially in the Latin American region".

A Presidential decree establishing a biological reserve for the golden lion marmoset at Poço das Antas in Rio de Janeiro state has been signed, but has not yet been implemented. An urgent plea has now been made by HRH The Prince of the Netherlands, President of WWF, and Sir Peter Scott, Chairman, to the Government of Brazil to accept ultimate responsibility for saving the lion marmosets from extinction.

American Society of Mammalogists

At its recent annual meeting the American Society of Mammalogists, a national organizational member of IUCN in the non-governmental category, unanimously passed a resolution on protection of endangered species in Indochina in which it supported such "respected international agencies as the World Wildlife Fund and the International Union for Conservation of Nature and Natural Resources in their efforts to secure the protection of the existing endangered mammalian species that reside in these countries".

A resolution on trade in endangered species resolved that the "American Society of Mammalogists compliment those countries that have ratified the Convention (on International Trade in Endangered species of Wild Fauna and Flora) and encourage the remaining countries to do so".

Gómez-Pompa to lead MAB

Dr Arturo Gómez-Pompa, Vice Chairman of IUCN's Commission on Ecology, was elected Chairman of the UNESCO Man and the Biosphere Programme at the Fourth Session of the International Coordinating Council of MAB.

The Council, meeting in Paris 18-26 November 1975, further elected as Vice Chairmen D. R. King (USA), D. S. Sastrapradja (Indonesia), E. Sene (Senegal) and V. Sokolov (USSR) and as rapporteur H. Löffler (Austria). These individuals form the Bureau which will guide MAB through its next two years of work.

The MAB programme has moved from a planning to an operational stage as a result of the numerous activities initiated nationally in relation to the fourteen major projects which form the MAB programme. The most active ones are Project No. 1 on humid tropical forests, and Project No. 3 on arid and semi-arid grazing lands. Although many activities have been started, including some highly sophisticated research projects, there still remains the problem of tying these together into an integrated international programme.

Most MAB activities are directed toward research, and are not easily coordinated with IUCN programmes. However, there is a need to coordinate the activities of the two organizations in relation to certain projects. Noteworthy among these is MAB Project No. 7 on island ecosystems. The two principal MAB activities, in the Fiji islands and in French Polynesia, are clearly of importance to the South Pacific programme of IUCN, and it is hoped that they will be presented during the South Pacific conference in Apia, Western Samoa, in June 1976.

By far the most popular project in the MAB series has turned out to be one which was included in the programme as a result of persistent lobbying by IUCN: Project No. 8 on the conservation of genetic resources, or operationally on the establishment of biosphere reserves, has the support of most countries which are associated with MAB. At the time of the MAB-ICC meeting 44 countries had established, or had indicated their intention to establish, biosphere reserves. These vary from small areas serving as sites for MAB research to a comprehensive network of large natural areas, based on existing national parks or other reserves in such countries as the USA and USSR.

There still remains confusion in some countries as to both the criteria for biosphere reserves and their relation to other kinds of protected areas. Consequently, on the initiative of the Cuban delegation, IUCN has been asked to prepare a joint publication with UNESCO which will give clear definition to the purposes and characteristics of the various kinds of protected areas, paying particular attention to biosphere reserves. It is expected that this task will continue to be a concern of the IUCN Commission on National Parks and Protected Areas.

World Heritage meeting

IUCN was represented at the meeting of the International Council of Monuments and Sites (ICOMOS) in Paris, November 20-21. The principal matter of joint concern was the coming into effect of the Convention Concerning the Protection of the World Cultural and Natural Heritage. The two organizations share a concern over the preparation of criteria and guidelines for designation of areas for the World Heritage List and the List of the World Heritage in Danger, and for the protection of those areas which have been so designated. IUCN's responsibility is being taken up by a committee of the Commission on National Parks and Protected Areas under the Chairmanship of Dr. Kenton Miller of the University of Michigan. ICOMOS is at present consulting its national committees for suggestions concerning criteria. Both organizations will meet, along with UNESCO and the Rome Centre, in Morges, 19-21 May 1976, consider progress and further action needed to assist the World Heritage Committee in its work.

Hard years ahead (continued)

(or may become) so acute that any conservation action is almost doomed to fail and should not be attempted. In others, they may be such that action will succeed *provided* that it takes full account of the needs, attitudes and knowledge of the local people.

Finally, our third response should be a much more flexible approach to conservation action. In some cases, it may be worth concentrating an apparently disproportionate effort on a single reserve. In others, it may be more effective not to set up any reserves at all but to have a public awareness campaign.

Conservationists can increase their prospects of success by devoting at least some of their efforts to cooperating with others in devising forms of development that are sensitive to ecological and social diversity. This year, it is more than ever important that they do. Habitat, the UN Conference on Human Settlements takes place in Vancouver from 31 May to 12 June. Unless forms of development are promoted there that will slow (if not halt) the abandonment of the countryside for the town, conservation will become still more of an uphill struggle than it is. The depopulation of the rural environment does not result in the greater availability of space for conservation, but more often in a growing degradation of rural ecosystems.

It may be repugnant for conservationists to divert their precious energies from conservation proper, or to be involved in development at all. But unless we are involved, much (if not all) that we have achieved in the past and hope to achieve during the coming years will be destroyed by the efforts to survive of millions of poor and hungry—helped only by biologically prodigal development on the one hand and socially naive conservation on the other, and therefore not helped at all.

Books

A field guide to the nests, eggs and nestlings of British and European birds

by Colin Harrison
Collins, pp 432, £3.50

A concise, fully illustrated field guide to the recognition and understanding of nest sites, structures and materials; breeding seasons; egg numbers, shapes, sizes and colours; incubation and hatching; nestlings and nestling period. North Africa and the Middle East are covered, as well as Europe. Sixty-four colour plates illustrate 145 chicks and more than 700 eggs. All birds breeding from the Sahara up to Iceland and Spitzbergen and from the Canaries and Azores to the Ural Mountains are described. Care is taken to emphasize the need for conservation. The purpose of the book is described as being to encourage protection through knowledge, not collection. Good value, and up to the high standard of Collins' field guides.

The living soil and the Haughley Experiment

by E. B. Balfour
Faber, pp 383, £5.25

Two books in one. The first is a revision of a book arguing the case for organic farming, which when published in 1948 helped to launch the organic movement in Britain. The second is an account of the Haughley Experiment, a 30 year (1939-1969) farm-scale exploration of the relationship between different agricultural practices and the nutritional quality of crops.

Die Säugetiere der Sowjetunion, Band II, Seekühe und Raubtiere

by V. G. Heptner *et al*
Veb Gustav Fischer Verlag, pp 1006, M239.40

Originally published in Russian in 1967. Covers all the sirenians and carnivores found in the Soviet Union, describing in detail each species' biology, distribution and behaviour. An exhaustive and monumental work.

Mediterranean type ecosystems: origin and structure

edited by Francesco di Castri and Harold A. Mooney
Springer-Verlag, pp 405, \$30.10

Examines the concept of ecosystem convergence—the extent to which similar physical environments in different parts of the world, acting on native plants and animals of different phylogenetic history, produce types of ecosystems organized in a similar way, and sharing similar structures and functional attributes. The similarities between the Mediterranean, Californian, central Chilean, South African and Australian mediterranean regions are considered in six sections: physical geo-

graphy of lands with mediterranean climates; vegetation in mediterranean climate regions; soil systems in mediterranean climate regions; plant biogeography; animal biogeography and ecological niche; human activities affecting mediterranean ecosystems. No. 7 in Springer-Verlag's Ecological Studies series.

Man's environmental predicament (an introduction to human ecology in tropical Africa)

by D. F. Owen
Oxford University Press, pp 214.

Man's struggle to exist in a complex tropical environment, to evaluate man's role in modifying and adjusting himself to Africa's tropical ecosystem and to analyze man's future, given a rapid rise in population pressure and certain technological inputs, are the themes of this book. In the reviewer's opinion, Professor Owen has done an admirable job in evaluating such an involved situation. Despite his statement that he has read only about 1 per cent of what is available, he has remarkable insight into the rapid environmental changes that have occurred in tropical Africa.

Although Owen is not a doomsday crier, he is not optimistic about man's future in tropical Africa. He indicates that the relationship between man and his environment becomes increasingly imbalanced. He states that most large towns will have insufficient water in about a decade; that it is possible that nearly half the potential food production of tropical Africa is lost through the action of weeds and pests; that insects are by far the biggest threat to economic development; that it seems likely that with rising human numbers the town and cities are to become the major centre of disease outbreaks; and that eradicating disease and improving agriculture will not in themselves result in a significant improvement in the already unsatisfactory state of affairs for the average African.

In his opinion economic development in Africa is impeded by the phenomenal growth of human populations, and, therefore, there must be a massive effort to slow down the rate of population growth and a policy on the part of the industrial nations to reduce growth sufficiently to allow underdeveloped countries to catch up. Neither of these stands much chance of being implemented in the near future.

A. de Vos

New IUCN publication

The following publication has just been issued:

The Legal Aspects of Ecological Reserve Creation and Management in Canada, by Robert T. Franson. IUCN Environmental Policy and Law Paper No. 9, 108 pp, US\$ 6.00, including surface postage.

Costa Rica (continued)

tropical wet forest ecosystem in the country and perhaps in all Central America."

By decreeing Corcovado a national biological reserve, President Oduber and the Costa Rican Government have ensured that it will contribute fully to national development in four ways: as a gene pool of enormous diversity to which Costa Rica and other tropical countries could turn in their search for improved or new species and varieties of domesticated plants and animals; as a field laboratory where scientists may acquire the knowledge needed to ease the development of a harmonious and lasting adaptation between society and the tropical humid environment; as a natural schoolroom for Costa Ricans; and as a perpetual source of beauty, inspiration and pleasure for the visitor.

A great many biologists have researched at Osa, making major contributions to biological science. Between 1964 and 1973, Osa was used as a living laboratory and classroom for the field training of more than 1,000 university students and professors from North and Latin America. This "scientific tourism" brought millions of dollars in foreign exchange into Costa Rica, and international fame to the Osa. However, by 1973, all biological research and educational activities in the area were forced to stop due to a major shift in management objectives by the Peninsula's principal landowners, Osa Productos Forestales.

At this point, the Tropical Science Centre, the National Park Service of Costa Rica and Amigos de la Naturaleza in Costa Rica joined with the Nature Conservancy and the World Wildlife Fund in the USA to draft a proposal on how best to safeguard the Osa. Intense negotiations between the Costa Rican government officials, the Nature Conservancy International Programme, Osa Productos Forestales and various Costa Rican conservation groups culminated in the presidential decree.

The establishment of Corcovado national biological reserve is a major contribution to conservation in Central America and to the global drive to save the world's tropical rain forests—both of which have IUCN and WWF programmes devoted to them. Corcovado was designated as a priority for national park or equivalent reserve status by the Central American Meeting on Management of Natural and Cultural Resources, organized by IUCN and held in San José, Costa Rica, 9-14 December 1974 (see *Bulletin* Vol. 6, p. 6).

22nd Party to Endangered Species Convention

The Republic of Ghana ratified the Convention on International Trade in Endangered Species of Wild Fauna and Flora on 14 November 1975, becoming the 22nd Party to the Convention.

But too many nations are stick-in-the-muds

Wetlands Convention in force

The Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, came into force on 21 December 1975. However, despite the clear economic gains to be won by conserving wetlands, especially coastal ones, very few nations have adhered to it.

So far there are eight Contracting Parties to the Convention: Australia, Finland, Greece, Iran, Norway, South Africa, Sweden, and Bulgaria, which on 24 September signed it without reservation. Eight other States have signed but not yet ratified the Convention: Belgium, Federal Republic of Germany, Ireland, Italy, Netherlands, Switzerland, USSR and United Kingdom.

Of the three conservation conventions to come into force during 1975, the Wetlands Convention has taken the longest to bridge the gap between adoption and entry into force, and has far fewer contracting parties. The Convention on International Trade in Endangered Species of Wild Fauna and Flora took just under two years, and has 22 parties so far. The Convention Concerning the Protection of the World Cultural and Natural Heritage took just over three years, and has 20 parties so far. The Wetlands Convention, however, has taken four years

and ten months, and has a mere eight parties so far.

Not a single country in the Americas has even signed it. Yet the United States, for example, has a great deal of money to lose with the loss of its coastal wetlands. In 1970, the National Estuary Study estimated the final market value of estuary dependent or associated fish at \$1.1 billion. It also estimated conservatively that the annual rate at which the coastal wetlands of the US are disappearing is 0.5 to 1.0 per cent of the total area.

Clearly, there is a pressing need to increase public awareness of the importance of wetlands, of the threats to them, and of the role of the Wetlands Convention in their conservation. It is to be hoped that adherence to the Convention will be the major goal of wetlands campaigns scheduled for 1976.

The Council of Europe has launched a 1976 campaign on wetlands. And in the US, the National Wildlife Federation's National Wildlife Week, 14-20 March, is to be built around the theme "save our wetlands". No doubt throughout the rest of the world, IUCN's members will urge their governments to adhere to this important convention as soon as possible.

Corcovado appeal launched

The US National Appeal of the World Wildlife Fund and the Nature Conservancy have launched an international effort to raise funds to ensure immediate management and protection of the Corcovado national biological reserve.

Some \$150,000 are being sought to provide protection, detailed planning and establishment of research programmes. An immediate grant of \$10,000 has already been made by WWF to establish a reserve patrol force and initiate a detailed survey of the reserve's boundaries. The Rare Animal Relief Effort (RARE) has matched the WWF grant.

IUCN and WWF Presidents congratulate Costa Rica

The President of IUCN, Professor Donald Kuenen, and the President of the World Wildlife Fund, Prince Bernhard, the Prince of the Netherlands, both sent congratulatory telegrams to President Daniel Oduber of Costa Rica on the establishment of Corcovado as a national biological reserve.

Prince Bernhard stated that Corcovado "promises the continued survival of a great many rare and specialized plants and animals of inestimable value to the people of Costa Rica and the rest of the world." He praised the conservation of such an important biological resource as "a far-sighted contribution to the development of Costa Rica and to the maintenance of the world's natural heritage."

Commending the decision of the Govern-

ment of Costa Rica to establish Corcovado, Professor Kuenen wrote that IUCN is convinced that it will serve the best long-term interests of Costa Rica, by promoting social, cultural, educational, scientific and economic development. He offered IUCN's help for "this commendable initiative".

Tortuguero National Park approved

Conservation progress in Costa Rica has not been confined to the Pacific shores of Corcovado. The security of Tortuguero on the Atlantic coast was greatly strengthened when a bill giving congressional approval to a Tortuguero National Park was passed on 28 October. As a result of this legislation there is now reason to believe that the Tortuguero breeding beach, which is visited by hawksbill and leatherback turtles as well as the massive nesting assemblage of green turtles, can be protected not only against exploitation, but also against a mounting influx of squatters, small farms and cattle ranches.

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