

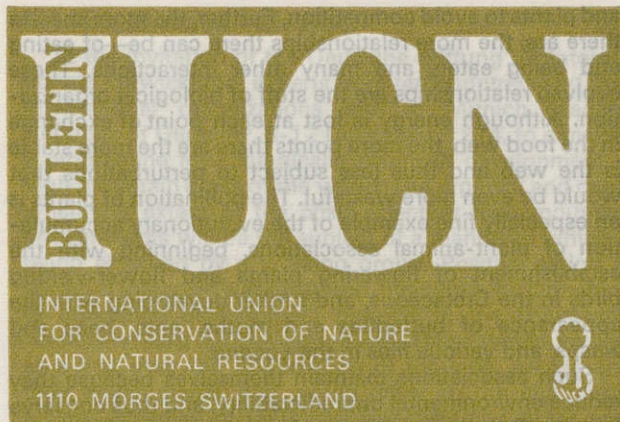
Interdependence: the trend we cannot buck

During most of his evolutionary career, man has had no more impact on the rest of nature than did the beavers which made the meadows of the Rocky Mountains, or the coral polyps commemorated by their reefs, or those great earth movers of the tropics, the ants. Recently, however, his efforts to feed his growing numbers and to satisfy his craving for material goods have provoked a devastating onslaught on "non-economic" habitats and species. Forests have been felled, marshes filled in, mountains put under the plough.

This process is self-defeating. Of course, we must feed ourselves; of course, we must have material goods—though not as many as we think. But if we continue to destroy the so-called non-economic habitats, we are likely to find achieving these necessities not easier but much more difficult. This is because we need "non-economic" land to maintain the economy of "economic" land, by acting as a storehouse of irreplaceable genetic materials and as a home and refuge for the great many unremarked, unrewarded species on which we depend for the smooth running of our agriculture.

If we are to go on improving the yields of our food plants and protecting them from pests and diseases, we need to retain their wild relatives. Resistance to a particular disease or pest is never a permanent quality, for new strains evolve to overcome it. Accordingly, we are obliged to retain as many varieties of our food plants as possible. It is not enough to keep them in seed banks (although seed banks are essential supplements), because seed banks can fail. In Peru, one of the largest collections of maize germ plasm in the world was lost when three refrigerator compressors broke down; and even the celebrated CIMMYT (International Maize and Wheat Improvement Centre in Mexico) has lost some of its unique collections of maize from the 1940s.

If we are not to greatly restrict our capacity for developing new products, we need to retain large areas of undisturbed habitat, particularly of tropical forest. Tropical



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forests are rich stores of diversity, containing potential foods, drinks, drugs, medicines, gums, resins, specific pesticides and other chemical compounds. Discovering and developing them is an enormous task—inventing them would be impossible. We should not forget that the chemical clues leading to the development of a great many synthetics—from aspirin to the oral contraceptive—were discovered from plants. Tropical trees, thanks to their constant battle with herbivores, are source-books of chemical invention, of which man has scarcely turned the pages.

Uncultivated land provides food, cover and breeding sites for plant pollinators and for the predators and parasites of plant pests. All are free goods, requiring of us only that we leave them their habitats. Were we to destroy these habitats, we would have to attempt both pollination by hand and machine and the exclusively chemical control of pests. This would be particularly difficult in the tropics, because the tropical networks of plant-eating insects and their enemies are intrinsically more complex than those of temperate regions, and hence more vulnerable to the careless use of pesticides. Even in temperate lands, we have rarely, if ever, achieved true chemical control—for we should not underestimate the extent to which we are already practising integrated (mixed chemical, biological and cultural) control, thanks to the fortuitous survival of predators and parasites.

Primarily technological controls would be prohibitively expensive—of energy, labour, capital and (not least) the resilience of the human spirit. The more functions we try to take over from other species, the more dependent we become on our own technologies and management systems. And the more we are dependent on them, the more disciplined we ourselves must be—the more we must subordinate ourselves to the demands of efficiency and expediency. Discipline on such a scale means loss of freedom, loss of individuality, and the constant anxiety, nervous tension and small-mindedness that comes when more and more ordinary men and women are in a position to make bigger and more disastrous mistakes. In fact, discipline on such a scale would probably be impossible to sustain.

An intelligent survival strategy, then, is one that evaluates the trade-off between using and not using non-human habitats—between destroying them so that they can be used for food-growing, settlement and so on, and conserving them, so that the productivity and efficiency of our farming and production processes can be maintained. We have not done this, and accordingly we have erred towards destruction. Unfortunately, by treating "non-economic" habitats and the species within them as at best expendable, at worst hostile, we are making life for ourselves and our children not merely more difficult, but dangerously close to impossible.

Life on this planet has progressed from few species to many, from simplicity to complexity. Probably this is because speciation conserves energy by enabling animals

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Peruvian receives the Getty Wildlife Conservation prize

Felipe Benavides, prominent Peruvian conservationist, has received the J. Paul Getty Wildlife Conservation Prize, an award of \$50,000. An international jury picked Mr. Benavides from among 525 nominees representing 42 countries. For many years he has been a prominent and driving force in Peru and all Latin America against the exploitation of endangered animals, especially the vicuña, cats, crocodiles, whales and giant otters.

The award was presented at a ceremony on January 28 at The White House in Washington, D.C. The citation is as follows:

"Responsible for major strides in conservation in Peru, in Latin America and beyond, with respect to endangered species, notably the vicuña.

"Moving force in creating the Manu National Park, safeguarding this fragile remnant of Amazonia's vanishing tropical rain forest.

"Energetic pioneer providing rays of hope and inspiration for conservation, notably in Latin America where lies a significant portion of the planet's biological heritage."

The award was made possible by a gift from Mr. Getty to the World Wildlife Fund and is intended to recognize outstanding achievement or service for the benefit of mankind in the conservation of wildlife.

and plants to avoid competition. Further, the more species there are, the more relationships there can be—of eating and being eaten, and many other interactions. These evolved relationships are the stuff of biological organization. Although energy is lost at each point of exchange in the food web, the more points there are the more stable is the web and thus less subject to perturbations that would be even more wasteful. The pollination of plants is an especially fine example of the evolutionary accumulation of plant-animal associations, beginning with the establishment of flowering plants and flower-visiting birds in the Cretaceous, and further developing with the appearance of butterflies and moths, ants, bees and wasps, and various flies in the Eocene.

Such associations maintain themselves because they reduce environmental unpredictability, and thus conserve energy. Over long periods of evolutionary adjustment, reciprocal adaptations between species create self-regulating, internally stable conditions. It is most unlikely that nature would discard such an advantageous arrangement. A species that cannot survive without eliminating a great many other species is clearly not long for this world.

Such a species is man—or rather industrial man. The 19th and 20th centuries have witnessed an "explosion" of extinctions, all but about a quarter of them inflicted by industrial (or industrializing) man: 75 species of bird in the 19th century, 53 species so far in the 20th; 27 species of mammal in the 19th century, 67 species so far in the 20th. A further 345 bird species are rare or endangered, and 200 mammal species are endangered or vulnerable, along with 80 species of amphibian and reptile*.

If these numerous extinctions are an explosion, one that will now quickly subside, there may be cause for regret but not for alarm. After all, there have been explosions before, though none induced by a single species, whenever nature was going through one of its periods of adjustment. If, however, they represent a trend, then the prospect could not be more chilling. For in that case, we would be attempting to buck the most powerful trend we know—that of evolution.

Since interdependence is the rule in nature, and has increasingly become so, we should conclude that those species capable of interdependence have a selective advantage. A careful look at man's relationship with other species, in agriculture and many other productive processes, shows that interdependence is indeed to his advantage, even though industrial man behaves as if it were not. Provided we change our survival strategy to take account of—and advantage of—this growing interdependence, there is a good chance we will prosper. If we do not, then we are likely to disappear with the same indisputable finality as did the dinosaurs, the passenger pigeon and the dodo.

Robert Allen

*Of course, other species from less well known classes, like the insects, may have evolved during this period. Equally, many may have become extinct.

US conservation groups to stage "Earthcare" wilderness conference

"Earthcare", an international conference on wilderness problems around the world will be held in New York City 5-8 June 1975 under the joint sponsorship of two major US conservation organizations, the Sierra Club and the National Audubon Society.

Participants are expected from six continents. The meeting is the Biennial Wilderness Conference, the 14th in a series which previously has been sponsored by the Sierra Club alone, and has focused only on North American wilderness problems.

"Earthcare" Conference offices are at 777 United Nations Plaza, New York, N.Y. 10017.

The United Nations Environment Programme and IUCN are honorary sponsors.

The Conference will coincide with World Environment Day on 5 June. A special salute in cooperation with the United Nations is expected.

Programme Activities

Conservation in the South Pacific Region

The Pacific islands have been viewed romantically as among the last unspoiled areas where man lives in harmony with nature. But rapidly increasing pressures of population and technology, including the proliferation of tourism and its infrastructure, are making it increasingly urgent that nature conservation measures be taken in the region.

IUCN has recently submitted to the Governments concerned a draft Convention on Conservation in the South Pacific Region. This calls for individual and joint action for the conservation, utilization and development of the natural resources of the region for the benefit of present and future generations.

Its provisions are similar to those of the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, signed in Washington, D.C., in 1940.

Experts' views on the draft Convention in relation to national parks were to be obtained through discussions at the First South Pacific Conference on National Parks and Reserves scheduled for Wellington, New Zealand, 19-27 February 1975.

The Department of Lands and Survey organized the Conference, under sponsorship of the Government in association with IUCN and the South Pacific Commission.

The Conference was designed to consider the political, social and economic implications of closer cooperation in the conservation of natural and historic areas, and to discuss practical steps necessary to establish and manage systems of national parks and reserves in the South Pacific region.

International cooperation for conservation of the Wadden Sea

The shallow North Sea coastal waters of Denmark, the Federal Republic of Germany and the Netherlands form a wetland of special importance.

Large areas of sand and mud flats are exposed at low tide and they support a high density of marine organisms. Large numbers of migratory birds—waders, gulls and ducks—congregate on these feeding grounds during their spring and autumn migrations, and other species occupy the area during summer or winter.

This Wadden Sea region is not only an ecosystem of high productivity, contributing to fisheries and other bio-networks, but it is of great importance for leisure and recreation.

Increasing land-use pressure for industry and residential purposes together with pollution constitute severe threats to the integrity of the Wadden Sea region. Conservation groups in the three countries have been active in studies and campaigns for improved protection of this major wetland area.

The three Governments concerned have indicated their interest in cooperating in the conservation of the region as an entity. IUCN has recently prepared a draft Convention on Conservation of the Wadden Sea Region and has submitted it formally to the Governments.

The Netherlands Government has signified its intention to convene, at an appropriate time, an international meeting to conclude a treaty based on this draft. IUCN has been asked to collaborate in the work involved. It expects to cooperate with local conservation organizations to coordinate views on the proposed Convention.

The World Wildlife Fund in Great Britain is planning an exhibition of Conservation Posters in London later this year. They have invited contributions from countries around the world, for which payment will be made. Posters should be sent in mailing tubes and addressed to World Wildlife Fund, 29 Greville Street, London EC1N 8AX.

Conservation Notes

Conservation view prevails in Dutch sea barrier plan

During the 1953 storm and flood disaster in the southwestern part of the Netherlands more than 1800 people died when extensive farmlands and farming communities were inundated by the sea. Following the tragedy the Government took steps to prevent a recurrence by authorizing a huge engineering effort, the Delta Project. Its principal purpose was to dam off four wide estuaries of the North Sea with massive barriers.

From the start of the project there has been opposition to the closure of one of these estuaries, the Oosterschelde, because this would cause the loss of a major marine ecosystem having enormous commercial importance as well as being a major natural resource. This tidal estuary covers some 400 square kilometres. At low tide almost a quarter of the area is exposed, providing, feeding grounds for large numbers of birds, principally waders. The Oosterschelde accommodates hundreds of thousands of birds, some 80 to 90 species including many migrants, which brings it within the criteria of the Wetlands Convention. The area contains 70 species of fish, 600 species of benthic fauna and 300 species of plankton. Moreover, it is important as a nursery for North Sea fishes.

This huge biotic community, and the complex factors involved in sustaining it, give the estuary exceptional importance, and make it one of the most valuable natural areas of Europe. Ecologists and conservationists have increasingly urged its preservation and their efforts have finally resulted in the Government decision to amend the Delta Project. Instead of a solid barrier, as originally planned, a much more expensive partially open dam will be built. This will have mechanically operated gates which can be lowered in case of high tides or storms. The regular ebb and flow of the tide will continue through the open gates, thus maintaining the productivity of the ecosystem. At the same time protection will be provided for the human communities and farmlands which are vulnerable to storms and high seas.

New quarterly journal on landscape planning

A new international journal, *Landscape Planning*, has begun publishing under the banner of Elsevier Scientific Publishing Company, Amsterdam. Its scope, as outlined in the first issue, will cover the use of land which has not been urbanized. It will be concerned with conceptual, philosophical, scientific, management and institutional approaches to land use. By emphasizing a multidisciplinary, ecological approach, it will attempt to draw attention to the interrelated character of problems posed by nature, man's use of land, and the resulting changes of landscape.

The first issue contains five major articles by recognized leaders in the profession, plus minor pieces and book reviews.

Editor in chief is A. E. Weddle of the University of Sheffield's Department of Landscape Architecture. He is backed by an editorial advisory board of 26 experts, including a number of people who have had long association with IUCN's Commission on Environmental Planning.

Subscription price is 88 guilders or US\$ 32 per year.

Persons from outside the United Kingdom who want to attend the International Symposium on Zoo Design and Construction at Paignton, England, but are not able to do so for lack of funds, are advised to apply to the nearest office of the British Council in their country. In certain circumstances some financial help may be given for attending the Symposium which will be held 13-15 May 1975.

Munich Mountain Meeting

At the invitation of the Deutsche Stiftung für Internationale Entwicklung, experts from ten countries and four international organizations met at Munich, Federal Republic of Germany, 8-12 December, 1974, to consider a programme for ecologically balanced development in high mountain areas of the world. The urgency and overwhelming extent of the crisis affecting high mountain environments will be the subject of a manifesto which is being prepared by a working group. Positive action to confront this crisis was proposed, including the launching of integrated development projects in the Himalayas, Andes and East African mountains. These would involve as a first step the cooperation of the local people and their governments, and would draw on the multidisciplinary expertise of mountain scientists and other professionals to provide for conservation-oriented development aimed at halting the degradation of mountain regions and improving the conditions of life for their populations.

To facilitate this programme, steps were taken to form an international association for mountain research and development, which would coordinate the work of existing mountain institutes and scientists. Plans were made to develop further an institutional framework which could handle the collection and dissemination of knowledge on conservation and development in mountain areas, serve as a means for drawing public attention to mountain problems and their solution, and act as a focal point for integrated development action. Close cooperation with MAB, FAO, IUCN and other organizations was considered essential. Representatives of the Government of the Federal Republic of Germany promised financial support for these continuing endeavors.

Reserve created for Indus river dolphin in Pakistan

The first reserve ever established specifically for a dolphin species has been declared for the Indus River dolphin, *Platanista indi*, in the Indus river between the Guddu and Sukkur barrages. The Sind Government announcement was published in Karachi on 27 December 1974.

IUCN and WWF have long been concerned about the problems of this marine mammal, and had urged the action be taken. Currently funding is sought for an ecological study of the dolphin to provide essential scientific data for its future management, to ensure its survival, and re-establish its productive status.

The animal occurs only in the Indus river and its tributaries. The total number remaining is small, thought to be under 1000. Main cause of its decline appears to have been large scale withdrawals of water from the river for irrigation during the last four decades or so. Although protected by law in both Sind and Punjab provinces, it still suffers losses from illegal killing and drowning in fishing nets.

The project was given high priority by IUCN's Whale Specialist Group at its meeting last May.

India promotes refuges for urban wildlife

The Government of India in December took action toward establishment of refuges for wildlife in suitable areas of urban districts.

In a message to State Governments and Union Territories, attention was called to zoological parks, gardens, playgrounds, fallow lands and marshes as examples of areas suitable. The message said these areas "may be declared" as urban wildlife refuges. A surrounding belt would be kept free of industries and other disturbances.

IUCN originally suggested refuges be set up in urban areas where this was feasible, and last summer the Indian Board for Wildlife, at its Xth Session, concurred and recommended the action to the Government.

Lee Talbot receives award

Dr. Lee M. Talbot, a member of IUCN's Executive Board from the USA, was honoured with the Schweitzer Award for 1974 at a ceremony held 14 January at the Smithsonian Institution in Washington, D.C.

The Schweitzer Award, sponsored by the Animal Welfare Institute, was presented to Dr. Talbot by Russell E. Train, Administrator of the Environmental Protection Agency. Dr. Talbot is Senior Scientist of the Council on Environmental Quality. He has been active in IUCN programmes for many years.

Journal of Mammalogy sets new policy

The policy of the Editorial Committee of the Journal of Mammalogy is to *not accept* manuscripts for publication dealing with endangered species or subspecies of mammals unless evidence is presented that specimens were obtained legally and with the approval of all appropriate regulatory agencies and that observations were made under circumstances that were not detrimental to the survival of any natural endangered population.

World Wildlife Fund News

WWF grants in 1974 exceed US\$ 2 million

The World Wildlife Fund provided over \$2 million for conservation projects all over the world during 1974, according to preliminary figures. The grants included US\$ 1,613,021 for 75 international projects ranging from tiger conservation in India to an East African youth course in environmental conservation, and from captive breeding of birds of prey at Cornell University, USA, to the establishment of guidelines for the future of the Alps.

National chapters of the Fund paid out grants totalling US\$ 409,416 to 47 projects within their own countries, including nature reserves and conservation of endangered species.

The year's effort brought the World Wildlife Fund's total grants since its foundation in 1961 to US\$ 15,092,677. WWF now has 24 National Appeals.

Rare Mauritius kestrels breed in wild

The impact of last month's bad news of the death of a Mauritius kestrel chick is lessened a bit by a new report that one of the only two wild pairs of kestrels has raised two or three young, bringing the total population of the species to eight or nine.

A report received in January by the World Wildlife Fund from Dr. Stanley Temple, an American ornithologist working to save the kestrel from extinction, said the pair nested in a hole in a cliff where the eggs and young were safe from the monkeys and rats which have caused great losses in the past.

It is believed that this is the first successful fledging of young kestrels for two years.

S. Dillon Ripley now Chairman WWF - U.S.A.

Dr. S. Dillon Ripley, Secretary of the Smithsonian Institution, and former member of IUCN's Executive Board, has been elected Chairman of the Board of World Wildlife Fund—U.S. Appeal.

A noted biologist, ecologist, educator and authority on birds of the Far East, Dr. Ripley was one of the founders of the U.S. National Appeal, and currently serves on the international board as well. He succeeds Ambassador Francis L. Kellogg, who remains President of WWF-U.S.

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Authors interested in submitting material for publication are invited to write to the Editor.

Sir Julian Huxley

Sir Julian Huxley, the distinguished British biologist and authority on evolution, died last month, aged 87. In his long and outstanding career, he held many posts, notably Professor of Zoology at King's College, London (1925-1927), Fullerian Professor of Physiology at the Royal Institution, London (1926-1929), Secretary of the Zoological Society, London (1935-1942), and as the first Director-General of UNESCO (1947-1948). He was elected a Fellow of the Royal Society in 1938, and knighted in 1958.

While Director-General of UNESCO, he played a key role in the foundation of IUCN, as he did later in that of WWF. A Member of Honour of IUCN since 1950, he remained keenly interested in its work, once remarking that of all his achievements, his part in IUCN's establishment was the one of which he was most proud.

Author of more than 40 books, Sir Julian Huxley was one of those rare scientists who were not only eminent in their field but were also keen and able science communicators. A frequent broadcaster and lecturer, as well as writer, he believed that spreading an understanding of science to all people was as important as the advance of science itself.

He was also exceptional in his fearless championship of the environment and population control long before these causes had won widespread support. He did not divorce his science from his concern for humanity—indeed, as much of his writing bore eloquent witness (for example, "Evolution and Ethics"), he saw them as intimately linked. There are too few like him, and he will be greatly missed.

Jean-Georges Baer

Professor Baer died on 21 February in Neuchâtel, Switzerland, at the age of 73.

Former Director of the Institute of Zoology, University of Neuchâtel, he was very well known for his authoritative work in parasitology, reflected in his numerous publications and several books. Thanks to his wide scientific knowledge and keen interest in ecology and nature conservation, Professor Baer was very active at both national and international levels. His numerous contributions in these fields have been widely recognized. He was named President Emeritus of the International Biological Programme; and he was for a time President of the Scientific Committee of the Swiss National Park and sponsor of the ornithological station at Serrach.

A Member of Honour of IUCN, his close links with IUCN date back to 1954 when he was elected to the Executive Board. He became President in 1958, serving until 1963, and continued to give his services to the Board under special appointment until 1966. Up to his death, he was still contributing to the Union's activities as a member of the Commission of Ecology.

He has therefore been connected with IUCN for most of its existence, besides acting as President of the World Wildlife Fund while it was being formed. IUCN owes Professor Baer a great deal, and we mourn a man of very great freshness of spirit, intellectual probity and wide scientific knowledge.

Pakistan creates national park on China border

Pakistan has set aside a large section in the Kirthar and Khunjerab area as a new Hunza National Park. Lying along more than 100 kms of the border with the People's Republic of China, the park will protect the rare Marco Polo sheep and snow leopard.

The action by Prime Minister Zulfikar Ali Bhutto follows an extensive study of the ecology and behaviour of ungulates and predators of the region by Dr. George Schaller of the New York Zoological Society.