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A whale of a sanctuary

IUCN is proposing that the southeast Indian Ocean become a sanctuary for whales and dolphins. By 'sanctuary' is here meant an area within which cetaceans may neither be harassed nor hunted and where their wellbeing — in terms of food supply and unpolluted water — is safeguarded.

This bold and imaginative proposal received shape and substance at the IUCN Cetacean Sanctuaries Workshop in Mexico on 4-9 February.

While agreeing that sanctuaries ought to be established in every ocean and in both hemispheres, the Workshop determined that for a number of reasons the southeast Indian Ocean deserved priority.

The suggested area (longitude, 90° - 130° East; latitude, the Antarctic continent northwards to 12° South) is believed to contain a distinct population of sperm whales (the only commercially hunted *toothed* whale) as well as protected blue, fin, humpback and Bryde's whales. Only the minke whale may be commercially hunted in this area and there are strong arguments for closing down even this operation.

Assessments of minke populations throughout the southern hemisphere are, for the most part, inferences from an observed decline within one heavily exploited zone (part of which falls within the proposed sanctuary). They are therefore 'guesstimates' rather than solidly based estimates.

Throughout the life-time of the IWC all regions north of 40° South within the Southern hemisphere have been closed to pelagic (factory ship) whaling for baleen whales. However there is now a distinct threat that this prohibition may be lifted.

Japanese sightings suggest that the South Pacific contains a considerable number of Bryde's whales. The species has a zero quota in the Southern hemisphere because its population there has not been estimated; nevertheless since 1976 the Japanese have been taking sizeable numbers (over 100 a year — and probably at least half of them from within the proposed sanctuary) for 'scientific purposes'.



There are two pertinent points here. One: if the Japanese produce population estimates which satisfy the IWC Scientific Committee, then a Bryde's whale quota in the Southern hemisphere could be allocated. Two: if this happens, it would undoubtedly lead to accidental killing of other whale species, particularly fin and sei whales with which Bryde's whales are all too easily confused.

The long-standing protection afforded these grossly depleted species would thus be lost. One safeguard against such a turn of events would clearly be the declaration of a sanctuary.

Australia's role

The country most directly concerned with a southeast Indian Ocean sanctuary would be Australia. An important contribution to the early cessation of all whaling in the area would be if the Australian Government were to adopt the policy proposed by its own Independent Inquiry into Whales and Whaling — that henceforth no whaling should be permitted in Australian waters.

Once whaling ceased it would still be necessary to stop the harassment of *all* cetaceans and to ensure, so far as possible, their wellbeing. Harassment would include, for example, tuna fishing by methods which ensnare dolphins. Wellbeing includes having sufficient food in a pollution-free habitat.

Broadly speaking, with the single exception of national legislation which Australia would have to enact, the

various international bodies and conventions could between them take care of the needs of the sanctuary. One of these conventions, and perhaps the most important, is still in the pending stage.

Krill Convention

The proposed Convention on the Conservation of Antarctic Marine Living Resources — known more succinctly as the Krill Convention — has not yet achieved a draft to which all 13 members of the Antarctic Treaty are prepared to put their signature. But remaining difficulties are, it appears, slight. They might well be speedily resolved and the Convention signed within a matter of weeks.

Krill is the principal food of all the baleen whales — and indirectly of the sperm whale which feeds on fish and squid which in turn feed on krill.

With the intention of firming up the conservation measures of the Convention before the final draft is agreed, IUCN has prepared a statement on Southern Ocean management. It will be sent to the governments involved in the negotiation of the Convention and to all IUCN members.

Extracts from the statement together with a look at the Krill Convention appear in the centre pages.

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IUCN's new approach to conservation

THE solution to conservation problems requires a rigorously professional approach. The challenge is so huge and the resources so limited that very careful thought has to be given to identifying priorities and making sure that finance, manpower and intellect are applied in the most effective way.

IUCN needs a well-designed programme and well-designed projects to achieve its conservation goals. This, in turn, calls for the active involvement of all parts of the Union — membership, Commissions and Secretariat — in programme-building and project-screening. In the six months since Ashkhabad IUCN has made considerable advances on this front.

Following a decision taken at Ashkhabad the Director General has established a Programme Planning Advisory Group (PPAG) to advise him on the contents of the IUCN programme. The membership of PPAG is as follows:

Director General	(Chairman)
Wolfgang Burhenne	(Chairman, Commission on Environmental Policy, Law and Administration)
Marc Dourojeanni	(Peru)
Pierre Goeldin	(Acting Chairman, Commission on Education)
Peter Jacobs	(Chairman, Commission on Environmental Planning)
Ashok Khosla	(India)
F. Wayne King	(Deputy Chairman, Survival Service Commission)
Kenton R. Miller	(Chairman, Commission on National Parks and Protected Areas)
Thomas Odhiambo	(Kenya)
Reuben J. Olembo	(United Nations Environment Programme)
Derrick Ovington	(Chairman, Commission on Ecology)
Carleton G. Ray	(USA)
Patricia J. Scharlin	(USA)
Mats Segnestam	(Sweden)
Lee Talbot	(WWF)
Adrian Phillips	(Secretary)

PPAG's first meeting took place on 26-27 February at Morges. This was essentially an occasion for agreeing how the Group would go about its task. It was decided that

- IUCN should work to a 3-year programme based upon the priorities of the World Conservation Strategy;
- this programme should be reviewed annually with the assistance of the membership and the Commissions, and 'rolled forward' one year;
- the programme should include the field activities of the WWF, and the support of WWF and UNEP;
- the contents of the programme should be set out in a programme document made available to all parts of IUCN.

PPAG will meet again in June and November of this year, to help develop a programme for 1980-82. The resulting document will be issued to membership and Commissions. The views of the membership will be sought and used in rolling forward the programme during

the course of next year.

The programme provides a framework for projects of WWF undertaken on the advice of IUCN. At present the number of requests for support from WWF and IUCN greatly exceeds available resources. A procedure is needed which is scientifically and technically thorough in order to identify those proposals which merit support.

IUCN has recently overhauled its screening procedure and all project proposals are now routed to the Project Screening Coordinator, Hartmut Jungius. By applying the agreed criteria and guided by the IUCN Programme and the internal screening of Commission Executive Officers, Regional Programme Officers and the Project Management Department, he will decide whether a project should be rejected, whether more information is required, or whether it should go to external screening.

External screening involves the Commissions concerned and any members of IUCN that are able to comment; their views are consolidated by a 'case' officer and considered by a joint IUCN/WWF Project Committee, which meets each month. The Committee may decide that a proposal does not justify support, that it should be supported when the funds become available, or that it should be supported immediately.

The results of Project Screening will never satisfy everyone, but the new procedure is designed to base decisions on the best information available — and to be speedy. If a project is rejected early on in the process, the proposer should learn the news quickly; if the proposal goes to external screening and the Projects Committee, he should learn the decision within 17 weeks. The process is also intended to be as impartial and thorough as possible, and to ensure that all relevant sources of advice are tapped. In these various ways, it is intended that support should be given only to well-designed projects — so implementing the programme developed through PPAG.

Adrian Phillips
IUCN Programme Director

Getty prize for Thai

THAILAND'S 'Mr Conservation', Dr Boonsong Lekagul, has received the \$50,000 Paul Getty Wildlife Conservation Prize of the World Wildlife Fund.

Russell Train, President of WWF-US, who announced the prize, said that Dr Boonsong has been a leader in the fight for wildlife preservation in Thailand, inspiring young people to help safeguard their country's rich heritage.

The 71-year-old doctor has served on IUCN's Survival Service Commission Executive Board and recently assisted IUCN with its Conservation Action Programme for southeast Asia.

France reviews its park policies

SYMBOLICALLY it was back to the salt mines on 1-2 March for the National Parks Directors of France and many non-governmental organizations, including IUCN. The occasion was a meeting at Arc et Senans — the first of five meetings being held in different parts of France to review French national parks policy and the first time 'outsiders' had been invited to participate.

Arc et Senans, a village in southeast France, was the site of a large saltworks in 1775. Today the factory buildings have been carefully restored to provide a contemporary conference centre.

Among the 60 participants at the meeting were the Directors of five national parks — Vanoise, les Ecrins, Port-Cros, les Cévennes, les Pyrénées — as well as representatives of regional parks. Also present were the Directors of two new national parks — Mercantaur and Ariège — which are undergoing the extensive public consultation process required under French law.

Major problems in establishing parks in countries with a long history include traditional resource conflicts such as hunting and forestry. There is a lack of national perspective and a great need for systems-planning to ensure a more balanced distribution of the parks by vegetation types.

Hal Eidsvik — Executive Officer to the Commission on National Parks and Protected Areas

Norway's reserves

IN the middle of the 1970s the Norwegian Ministry for the Environment launched countrywide plans for the establishment of reserves in wetlands, forests, mires and nesting areas.

In 1978 111 new reserves were added to the 135 already existing. Among them were 54 seabird reserves which form part of a long-term programme for a network of breeding areas along more than 50,000 km of the Norwegian coast.

Despite the new steps, the total size of protected conservation areas in Norway is still quite small — 1.73% of the total land area compared with 3.85% in Sweden and 2.02% in Finland.

New reserves, however, will be added in 1979. Foremost among them will be the 340,000-hectare Hardangervidda national park in southern Norway's high mountain plain.

Help for Parks journal

THE magazine, *Parks*, which began life as a joint publication of the US and Canadian National Parks Services, has recently received a 2-year grant of \$20,000 a year from the US AID programme. The magazine will be distributed to all AID offices. Support for conservation objectives in less developed countries was a primary reason for the grant.

IUCN became the publisher of *Parks* following the General Assembly in Ashkhabad. The publication has also received financial support from UNEP, WWF and the governments of Australia and New Zealand in addition to those noted above.



The nocturnal and largely insectivorous spectral tarsier is a primitive primate resembling those of the early Eocene period 50 million years ago. Its ability to turn its head through 180 degrees gives it a local reputation for evil powers. Few were seen in the park.

Gunong Mulu - expedition's rich finds

IN SEPTEMBER of last year, deep in the forests of Sarawak, a traditional Bornean longhouse was burnt to the ground and it was no accident.

This marked the end of a phase in a detailed investigation of tropical rainforest, for the longhouse had been the home of a team of 115 scientists during a 15-month expedition organized by the Royal Geographical Society, in close collaboration with the Department of Forests, Sarawak.

The expedition operated in the Gunong Mulu National Park, 544 sq.km of forests, mountains and rivers in eastern Sarawak. The Park, which is densely covered in undisturbed tropical rainforest, is one of the largest national parks in Sarawak and scientifically one of the most important reserves anywhere in the world.

The diverse forest types range in altitude from low-lying alluvial, to mixed dipterocarp forests with hard-woods towering to over 50 metres on the mountain slopes, with orchids and pitcher plants on the mountain crests.

The scenery of Mulu is magnificent, with sweeping views over forested valleys and meandering rivers towards Gunong Mulu, 2377 metres. Mulu and its range of hills are sandstone, but to the north of the mountain is a ridge of limestone, with cliffs, pillars, caves and gorges. Pinnacles of limestone rise above the forest and there are miles of caves and caverns that help to make this one of the scenic wonders of the world.

The world's rainforests are being felled at an alarming rate and the purpose of this expedition was to learn more about the ways such forests function, so that this knowledge can help in the conservation or utilization of this threatened resource.

Although the final results of the expedition are not yet known, there will be a substantial volume of academic research published by members of the expedition's 47 main projects. The expedition's pro-

In Southeast Asia the tropical rainforests are one of the richest and most diversified ecosystems in the world, and many of them are to be found in Borneo.

Gunong Mulu, in Sarawak, Borneo, has a unique combination of habitats, species and life-forms. As a huge virgin rainforest inhabited only by the primitive Penan people, it will prove a useful 'marker' to assess changes in function and structure of tropical ecosystems.

grammes have undoubtedly yielded many new discoveries. New species have been collected and new theories are emerging from much of the scientific work.

Dr Anderson, former Assistant Conservator of Forests, Sarawak, is now piecing together much of this research for a plan for the future management of the park. This will concentrate on conservation, development and tourist potential, continued research, and the role of the shy nomadic Penan tribal people who live and hunt in the Mulu forests.

Both the Sarawak Government and IUCN/WWF must be acknowledged for their farsightedness in supporting and funding this part of the project. While scientists continue to sift through the data collected at Mulu, work has already begun in establishing a headquarters for the park, with two local guides employed to help future visitors and scientists.

In September this year, almost a year after the end of the field work undertaken by the expedition, a symposium is to be held in London at the Royal Geographical Society.

Conservationists the world over await this symposium with interest. Never before have so many disciplines worked so closely together to unravel a few more secrets of that precious and diminishing resource - tropical rainforest.

Nigel Winsor, member of the expedition



Nomadic Penan from Mulu hunting with blowpipe and poisoned darts, carried in a bamboo quiver.

ANTARCTICA: INCHING TOWARD A KRILL CONVENTION

Fishing for trouble?

KRILL is a Norwegian whaling term meaning 'whale food'. It refers to many species of planktonic crustaceans, but most particularly to the dominant species, the shrimp-like *Euphausia superba*.

Krill is the key element in the Antarctic food web and (as is clear from its name) the staple diet of whales. The Southern Ocean may hold one quadrillion of them — one thousand million million. Weight for weight they contain as much protein as beef steak.

For the past year the 13 members of the 1959 Antarctic Treaty have been secretly negotiating a 'Krill Convention' to regulate this potentially rich fishery. Non-members will only be allowed to join the new 'Krill Commission' by invitation of the present members.

Five of the 13 members — Australia, France, New Zealand, Norway, the UK — have mutually agreed territorial claims on the continent. Two others — Argentina and Chile — have claims which conflict with each other's and the UK's. The remainder — Belgium, Japan, South Africa, USA, USSR and relative newcomer Poland — do not recognize any territorial claims. West Germany is expected to join the 'club' during 1979.

The treaty itself makes no substantive reference to resources; back in 1959 the continent was thought to hold nothing of any great economic value.

What is a sustainable catch?

In the past, estimates of annual sustainable yield have been as high as 160-1000 million tonnes — sufficient to multiply several times over the world's total fish catch (73 million tonnes in 1976). More recent estimates are lower. In 1978 Soviet scientists put the maximum catch at 15-50 million tonnes while some US scientists said that an annual krill tonnage of only 2½ million would reduce the whales' food by as much as 5% — a significant reduction which could not possibly aid recovery of whale populations.

Before the introduction of commercial whaling, it is estimated that the baleen whales consumed 190 million tonnes of krill a year. Today the whales probably consume about 50 million — leaving a theoretical surplus of 140 million tonnes a year for man.

However, this simple arithmetic is too simple for what is a complex issue. The change in populations over time poses one of the unsolved ecological problems in the area. The decline in whales has undoubtedly led to an increase in seals and quite possibly other krill-eating species.

More and more nations are trying to get a foothold in the Southern Ocean fishery. Their motives are various — an immediate need for krill as food; estab-

lishing the right to participate; bolstering territorial claims to the Antarctic mainland and continental shelf.

While there are still many obstacles to the development of any major krill fishery, certain technical difficulties have recently been overcome. Catch rates have risen and work on product development has progressed significantly.

In 1977 the Chileans prepared intact tail meats by 'roller peeling', and then moulded them into frozen blocks which were sawn into portions and breaded. Test marketing on these 'krill fingers' gained an 84% approval rate. The Chileans have recently reported a breakthrough in processing which uses 90% of the raw krill's live weight.

In Japan a heat-pasteurized fishcake was successfully developed from krill in 1977, and in 1978 Nippon Suisan Co marketed 100 tonnes of frozen raw krill with good consumer response.

Krill meal for cattle and poultry has been produced on a commercial scale by the USSR, Japan, West Germany, Poland and Chile. There are no big technical problems but there are reports of high levels of abortion in Polish cattle on krill-feed diets.

The Convention in outline

Although the Krill Convention is still being negotiated, the London meeting of the Antarctic Treaty powers in September 1977 agreed on the broad outlines. They are:

- to adopt an ecosystem approach;
- to work towards 'conservation' which was defined to include rational use;
- to recognize the prime responsibility of the treaty powers within the treaty area, but to extend the Convention north of the treaty limits of 60° South;
- to restrict discussions on the Convention to treaty members but to consider allowing other states to attend the

Which countries are catching krill?
Argentina, Australia, Brazil, Canada, Chile, Cuba, Denmark, Germany (East and West), France, Japan, New Zealand, Norway, Poland, South Africa, South Korea, Spain, Taiwan, UK, Uruguay, USA, USSR.

meeting called to adopt the Convention (in Canberra later this year?).

At the London meeting the delegates also agreed to recommend to their governments that in the interim period before the Convention comes into force (that is to say, before all signatories have ratified), they would:

- cooperate in the exchange of catch statistics;
- take great care to avoid depleting stocks or jeopardizing the Antarctic marine system as a whole;

• urge other countries active in the area to take account of the interim guidelines.

The new Convention applies to living marine resources south of the Antarctic Convergence. The main objective is to ensure that harvesting does not decrease any populations below levels which allow stable recruitment. Other objectives are to maintain ecological relationships and restore depleted populations.

Following the London meeting, differences still remained on sovereignty, on voting, on finance, on inspection observation and enforcement, and on European Community participation.

The meeting reconvened in Buenos Aires in July 1978 in hopes of resolving these differences. But hopes were dashed. Further meetings in Washington last September and in Berne last month have left the basic situation unchanged. The differences remain.

Ecosystem approach

The adoption of the ecosystem approach in the draft Convention is a very important advance in fishery management. Hitherto fishery agreements have usually considered species in isolation, ignoring the effects of harvesting on non-target species. The Convention commits the parties to refrain from exploiting prey species (krill) to an extent that damages predator species (e.g. whales).

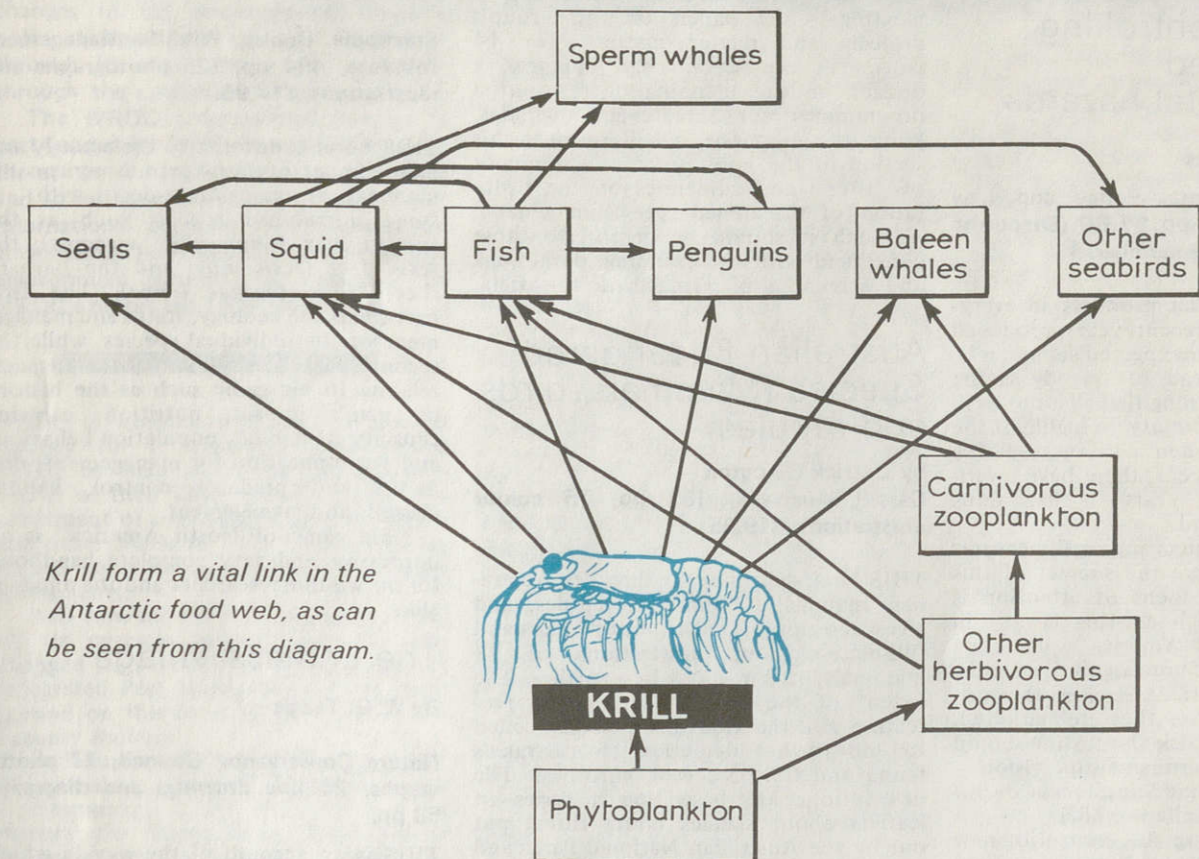
A further plus for the Convention is that the boundary chosen — the Antarctic Convergence — is a natural physical frontier, marking off a distinct ecosystem and separating biologically distinct marine communities. The conservation cause may also be strengthened by the fact that certain of the parties (the US, the UK, Belgium, New Zealand, Australia) are unlikely to be very active in fishing for some time, if ever.

All the same there are plenty of snags — both from the standpoint of politics and conservation. The conflicting interests and ideologies of the parties and their 'keep-out' attitude towards non-parties and international agencies (a recent FAO initiative received a cold welcome) provide rich seed for political feuding.

On the score of conservation the chief worry lies in our ignorance of the pivotal relationship of krill to the entire Antarctic ecosystem in the context of two mutually contradictory aims of the Convention — to build up the krill fishery and the populations of depleted whale species.

Reflecting this concern IUCN has commissioned two research projects. One calls for the development of a model of the Southern Ocean ecosystem and the other for the preparation of detailed management proposals for the area. The former will be published in late 1979 and the latter in mid-1979.

Source: Earthscan Briefing Document



Krill form a vital link in the Antarctic food web, as can be seen from this diagram.

IUCN statement on Southern Ocean management —an extract

RECENT developments demonstrate that the Southern Ocean ecosystem is already facing a rapid increase in the taking of krill.

These, with continued exploitation of fish populations, constitute threats to the ecosystem and emphasize the urgent necessity for establishing a sound management regime for the area. IUCN thus welcomes, in principle, any attempt to establish such a regime and would like to support efforts now underway to draft an international Convention that would meet requirements for the conservation of the living resources of the area.

A conservation regime for the Southern Ocean can only be welcomed in practice, however, if it is designed to answer comprehensively and in a feasible way the problems identified. IUCN is, unfortunately, not in a position to make a full appraisal of the regime proposed, since negotiations for its development have been kept private. The Union urges that the governments involved allow circulation of the negotiating text of the draft Convention as soon as possible in order to benefit from all available expertise.

As understood by IUCN, the basic principles of the draft Convention,

although geared to the exploitation of living marine resources, would be a significant step forward in the development of sound fishery management. Of special importance is: the recognition of the interdependence of all species within the Antarctic ecosystem and the effects of exploitation; and recognition of the need to prevent irreversible changes in the system. Further, progress has apparently been made in drawing up a system of management with clear and comprehensive roles and powers for a new Commission and advisory Scientific Committee.

Notwithstanding the merits of this approach, IUCN believes that several other crucial points must also be taken care of to ensure that such a Convention is effective. The Union wishes to draw attention to these, restricting its remarks to matters which have a direct bearing upon the management regime itself.

It is essential that, for management purposes, the marine area south of the Antarctic Convergence be treated as a whole since the Convergence constitutes the natural boundary of the Southern Ocean ecosystem.

Great caution is recommended in the establishment of catch levels under the Convention, given the current uncertainty over the effects of taking various living resources at particular rates and in

particular areas. In order to have baseline data for later decisions to alter initial catch levels, it is strongly urged that areas be set aside from all exploitation of living resources *ab initio*, selected according to the best available knowledge of ecosystems rather than to resource-specific concepts.

As several other international accords concern the living resources of the Southern Ocean area (e.g. CITES is applicable to several marine species there), care must be taken that the draft Convention both avoids conflicts and provides for coordination with these agreements. It would seem particularly important that lack of clarity regarding competence between the International Whaling Convention and this draft Convention be avoided.

Because of the urgency for establishing a conservation regime for the Southern Ocean, it is recommended that interim arrangements be established to promote this regime prior to the entry into force of the Convention. A possible way to achieve this could be by developing a protocol to the Convention specifying that the Signatory States shall seek to secure prompt ratification of the Convention while in the meantime applying its provisions. Failing this, an informal arrangement to the same effect could be drawn up by the Signatory States.

Premarket testing of industrial products: a means of controlling unrecognised environmental hazards

by Martin A. Mattes

IUCN Environmental Policy and Law Paper: No. 13, 111 pp, \$7.00. (Discount from 20% for IUCN members.)

SEVERAL industrial products in everyday use have in recent years produced tragic and wholly unexpected side effects. The common thread of tragedy is the lateness of the warning that all is not well.

Usually it takes injury to highlight the peril. But even when awareness dawns before casualties occur, there have invariably been many years of hazardous exposure beforehand.

Dangerous products and legal measures for their control are the subject of this IUCN study. The focus of attention is the extent to which existing laws – in West Germany and America – can cope with the problem of unrecognized hazards.

Effective regulations require the testing of products *before* they are marketed. In areas of serious risk the testing should be under close government supervision – and here the US Toxic *Substances Control Act* provides an excellent model.

For those seeking the control of new and as yet unsuspected environmental hazards, this survey of laws and regulations, existing and proposed, offers a range of appropriate legal tools.

A Study of Management Agreements

by M.J. Feist

Countryside Commission, John Dower House, Crescent Place, Cheltenham, UK, 89 pp, £5.75.

MANAGEMENT agreements provide an attractive alternative to outright acquisition of conservation lands and rights of way. The British experience is examined in considerable detail, legislative background, successes and failures. Standard formats of agreement for nature reserves, grazing rights, agricultural tenancies, and countryside access are included. All in all, an excellent reference for those searching for alternatives.

Threatened Deer

IUCN, 13 photographs, 27 maps, tables, charts, 434 pp, \$18.00. (Discounts from 20% for IUCN members.)

IUCN and its Survival Service Commission now have a whole series of comprehensive conservation programmes, but the Threatened Deer Programme, launched in January 1974, was the first – the pioneer. The programme now boasts 11 major field projects and in the autumn of 1977 the SSC Deer Specialist Group met at Longview, Washington State, USA, to

review progress.

Half of this substantial volume contains the proceedings of the Longview meeting – 17 papers on the Group's projects and related matters. The 14 papers in the second half comprise a dossier on the planning of restoration programmes for threatened ungulates. While the emphasis is still on deer this section of the book provides a summary of criteria and guidelines on the restoration of threatened species in general. As such it should be helpful to those concerned with the planning, developing and screening of projects in this field.

Australian Endangered Species (Mammals, birds and reptiles)

by Derrick Ovington

Cassell Australia, 183 pp, 75 colour illustrations, \$19.95.

THIS book describes the threat to Australian mammals, birds and reptiles, and gives descriptions, distribution maps and full-plate colour illustrations of 23 mammals, 18 birds and two reptiles. The extent of the problem of species protection and the kind of measures needed to end further depletion of Australia's fauna and flora are well portrayed. The descriptions are based on a series of leaflets about species under threat put out by the Australian National Parks and Wildlife Service, of which the author is the present director. He is also the Chairman of IUCN's Commission on Ecology.

Mountain Monarchs: wild sheep and goats of the Himalayas

by George B. Schaller

Chicago University Press, Chicago and London, 425 pp, £17.50.

THIS book presents a detailed study of mountain ungulates belonging to the sub-family of *Caprinae*. It concentrates on three species in Pakistan, Nepal and India – the urial (*Ovis orientalis*), the wild goat (*Capra aegagrus*) and the bharal or blue sheep (*Pseudois nayaur*). Little has been published about the last-named, so the information on it given here is most valuable. Other species receiving attention include the markhor, the Himalayan tahr and the Nilgiri tahr.

Subjects covered include geographical and ecological distribution, physical attributes, population dynamics, food habits and behaviour. The main predators, in particular the snow leopard, are discussed.

This most interesting book puts together the results of several years of field work carried out under extremely difficult conditions. The concluding chapter provides a new perspective on the evolution of the *Caprinae*.

The author makes it clear that unless there are basic changes in land-use practices the large mammals of the Himalayas are doomed.

Big game of North America

Stackpole Books, Wildlife Management Institute, 494 pp, 125 photographs and illustrations, \$17.95.

THIS book is devoted to the ecology and management of the North American big mammal species. Also dealt with are some introduced species such as the Iranian Ibex (*Capra ibex aegagrus*), the Axis deer (*Axis axis*) and the Barbary sheep (*Ammotragus lervia*). The first part treats the ecology, status and management of the individual species, while the second part covers many other aspects relating to big game such as the history of man's impact, nutrition, carrying capacity of habitat, population behaviour and its implication for management, predators and predator control, habitat changes and management.

"Big game of North America" is an impressive and very complete handbook for the wildlife researcher and the amateur alike.

The Endless Village

By W.G. Teagle

Nature Conservancy Council, 17 photographs, 24 line drawings and diagrams, 58 pp.

THIS is an account of the way in which wildlife has adapted to the Birmingham area of Britain, so providing a rich source of enjoyment to town dwellers. Buildings, walls, gardens, parks and open spaces, road and railway tracks – all have potential for wildlife conservation.

The Endless Village aims to stimulate a much wider awareness of urban wildlife and to indicate to planners how to encourage plant and animal communities in built-up areas. The Nature Conservancy Council is seeking reactions to this publication from other countries and would be pleased to send a copy to anyone interested in commenting on it. Requests for copies should be sent to: *Nature Conservancy Council, International Branch, 19 Belgrave Square, London SW1.*

Valorisation des milieux tropicaux par la conservation de la faune sauvage

International Foundation for Game and Wildlife Conservation, 15, rue de Teheran, F – 75008 Paris, 50 French francs.

THIS book begins with a very brief description of tropical ecosystems and their wildlife. The second part of the book contains a critical analysis of the relationships between tourism and wildlife, giving both positive and negative aspects, and the possibilities for improving these. The third part presents a strong argument, backed up by numerous references, for the rational utilization of wildlife as an excellent source of protein.

A go-go NGO of considerable influence

ONE of the leading environmental NGOs in the US is the Natural Resources Defense Council. In the few years of its existence NRDC has brought about major changes in US environmental policies both at home and abroad — directly through its own efforts and indirectly through the catalytic role it has played.

The NRDC International Project is part-funded by WWF. It seeks to identify threats to the international environment and to influence decisions of the US and international agencies affecting the environment. The Project also assists foreign environment groups. A summary of NRDC's report for 1978 follows.

news from members

Executive Order makes it clear that NRDC's lawsuit played a part in bringing about the President's intervention.

Tropical rainforests

May 1978 saw the first issue of the NRDC *Tropical Moist Forests Conservation Bulletin*. It describes the efforts of organizations throughout the world to protect tropical moist forests. Last June NRDC played a major part in a State Department/AID 3-day conference on tropical deforestation.

An interagency working group now exists to draw up a programme of governmental action and NRDC has established a parallel, nongovernmental Tropical Forest Task Force to influence this decision-making process. The US government, though, has yet to commit itself to specific initiatives.

Endangered species

NRDC has pressed AID to fulfil its obligations under the US Endangered Species Act, focusing in particular on the large-scale Mahaweli Irrigation Project which threatens elephants in Sri Lanka. AID has acknowledged these obligations and has included a wildlife biologist in the team that will prepare an environmental assessment of the Mahaweli Project.

A glaring flaw in US enforcement of CITES was the refusal of the Animal and Plant Health Inspection Service (APHIS) to seize plant shipments lacking proper documents — or to prosecute the shippers. As a result of NRDC pressure APHIS policy changed and in recent months large number of illegally imported plants have been seized (see February *Bulletin*, page 16).

CITES lists Alaskan wolves in Appendix II. Yet in 1977 there was a proposal to kill 1000 of them — about 10% of the population. NRDC filed a lawsuit under the National Environmental Policy Act and set a major legal precedent by halting the operation after only some 30 wolves had been killed. The state of Alaska and the Department of Interior have appealed and NRDC is defending the appeal in two separate courts.

Action on fluorocarbons

The possible depletion of the ozone layer in the upper atmosphere through excessive use of fluorocarbons could have catastrophic effects on human health and on climate the world over. Back in 1974 NRDC first began to take action to halt these noxious emissions and in 1978 was more active on this issue than any other NGO. By year's end the US had banned the manufacture and use of nearly all fluorocarbons used in aerosol sprays.

NRDC was contracted by the West German government to prepare a comparative study of fluorocarbon regulation in 12 nations and three international organizations. The result was a massive and detailed report which was presented to an intergovernmental conference on the issue hosted by West Germany in

December last. Only a handful of countries have as yet any restricting legislation.

NRDC has also focused on US exports of other toxic chemicals whose domestic use is forbidden or severely restricted. The aim is to ensure that foreign governments and purchasers — especially in the developing world — are fully aware of the risks. NRDC worked with concerned Members of Congress to amend the federal law which exempted goods manufactured solely for export from home-market constraints. In July the amendments were accepted and proper labelling of exported pesticides (and information on their status within the US) is now mandatory.

Foreign environmentalists

NRDC has found that foreign environmentalists — both in and outside government — often lack sufficient information and expertise concerning the environmental issues they face. Foreign NGOs have smaller resources and less access to experts and government-controlled information than those in the US. Moreover, the US is often the first to uncover new environmental threats.

Since March 1976 NRDC has published a 2-page periodic newsletter: *World Environment Alert*. This is mailed to some 450 environmentalists or groups in 62 countries. During 1978 NRDC responded to some 200 requests for publications mentioned in *Alert* and learned of instances when it had primed action.

NRDC has also begun two fellowship programmes to assist foreign environmentalists. With UNEP's assistance NRDC will serve as host to environmentalists from developing countries. The first UNEP Fellow, the Director of the Caribbean Conservation Association, was at NRDC in June 1978.

In addition the German Marshall Fund is financing a pilot programme under which Fellows nominated by two European environmental organizations, *Les Amis de la Terre* of France and the *Okologie Institut* of West Germany, will spend up to two months at NRDC.

NGOs sway policy

NGOs in the US are a force to be reckoned with. Consultation and public hearings are now part of the American scene, and in the run-up to the Convention on International Trade in Endangered Species meeting in San José, conservation bodies were quite successful in changing the government line.

Starting last November and continuing into March, the hearings on the US proposals attracted wide publicity and a large attendance. As a result the Department of the Interior formally withdrew several of its original proposals (concerning, in particular, the gray whale, fin whale and sei whale) and has modified its position on a number of species including the bobcat.

NRDC is working with staff of the US Agency for International Development (AID) to help make its procedures a model of their kind. This liaison follows settlement of a lawsuit brought by NRDC and other NGOs in 1975 against AID for failure to file environmental impact assessments.

AID now requires such assessments for all its overseas projects and has also changed its pesticide policy in favour of Integrated Pest Management. (For background on this form of pest control, see January *Bulletin*.)

In January 1978 NRDC issued a paper: *Environment, Natural Resources and Development — the Role of the US Agency for International Development*. Its main recommendation — that AID produce 'environmental profiles' of aid-receiving nations — was enacted into law by Congress last spring. NRDC is monitoring AID's preparations of these profiles.

Last July NRDC also began a 15-month study of AID as part of a comparative research programme on the environmental performance of six bilateral development agencies. The programme is being organized by the International Institute for Environment and Development.

Law in developing countries

NRDC has assisted IUCN's Commission on Environmental Policy, Law and Administration by commenting on environmental law in developing countries. A specific example is Nigeria. The Nigerian government requested that NRDC-member, Barbara Lausche (formerly a government legal adviser in Gambia) be part of a US team visiting the country to recommend improvements in Nigeria's environmental protection programme.

Carter's intervention

More than \$6 billion worth of US exports are annually financed at low interest rates by the US Export-Import Bank. These include road, dam and railroad construction, mining, equipment for offshore drilling and other environmentally harmful activities.

In 1977 NRDC sued the Bank for ignoring the US National Environmental Policy Act which requires all US agencies to assess the environmental impact of proposed actions. On 4 January this year President Carter signed a comprehensive Executive Order compelling compliance. The press release accompanying the

Salmon fisheries net seabirds in thousands

IN 1960, 3500 metres of fishing net were washed up on a beach on Amchitka Island, Alaska. The gillnet contained two dead dall porpoises, three dead sea otters, three living sea otters and 50 dead seabirds.

More recently, it was estimated that the Danish gillnet fishery in the North Atlantic killed between 250,000 and 500,000 thick-billed murrelets annually from 1965 to 1975.

Seabirds and other animals frequently become entangled in fishing nets, lured by the apparently easy catch.

There are few reports about the mortality of birds and other marine animals in lost or discarded gillnets, but the death rate could be quite high. Gear that floats free without the removal of the float line will continue to fish near the surface, and the size and duration of the incidental kill of the fishing industry then becomes difficult to quantify.

Normal fishing operations on the high seas have a large incidental kill of seabirds but not until Tull, Germain and May published their paper (*Nature* 237: 42-44, 1972) did the ornithological community become aware of the scale of the kill.

They gave figures of between 250,000 and 500,000 murrelets killed every year by the Danish salmon fishery in the North Atlantic. But how does this compare with the incidental kill of Japan's North Pacific salmon fleet, which takes vastly more fish?

King, Brown and Sanger, in a paper presented to an international symposium on the conservation of marine birds, put the figure at between 214,500 and 750,000 birds killed annually. And the Japanese Fishery Agency has estimated the incidental kill for seabirds in 1977 at 350,000, within the range given by King *et al.*

Anthony De Grange, of the US Fish and Wildlife Service in Alaska, did research on the incidental kill of seabirds during the summer of 1978. He worked on two Japanese research vessels, both of which used gillnets (nets which are floated on the surface and weighted at the bottom, and pulled behind the boat).

Fifty-four birds were killed in the gillnets of the boats he was on. But more representative of the commercial catch is probably the 1977 gillnetting by 14 Japanese research boats in the Bering Sea and North Pacific, when a total of 3279 birds were caught.

The types of birds that dive for their food — shearwaters, murrelets and puffins — are the most likely to become entangled in the nets, although many other birds such as albatross, kittiwakes and fulmars are attracted to the fish-laden nets as well.

DeGrange estimates that it is possible that more than 6.5 million birds have been killed due to gillnetting in the North Pacific since 1952.

There have been six estimates to date on seabird mortality in the Japanese

salmon fishery, all of which indicate a drop in the incidental kill. This would appear to be because of the reduction in the fishing effort and area fished.

Agreements between Japan and the Soviet Union reduced the area of seas fished in the North Pacific and Bering Sea, and in 1978 Japan reduced its fleet, which was born in 1952, after an agreement with the US.

It would be difficult to reduce the death-rate of birds without harming the salmon fishery. Altering the net size or lowering the gillnet below the surface would mean a less efficient operation.

The 200-mile fishing limit stops the Japanese fleet from coming near American soil, except around the Near Islands, which is where many puffins and murrelets nest.

Keeping the Japanese out of these waters would mean that the fleet would have to take up the slack in other areas, but it would at least ensure that the breeding birds would be safe from incidental kill.

Stop this traffic!

URGENT action is needed now to stop the lucrative trade in exotic birds from Indonesia if many species are not to become extinct.

That is the opinion of World Wildlife Fund Indonesia, which has become increasingly worried about the trafficking of birds, often taken as status symbols and ornaments.

Tourists are allowed to take out four birds each of unprotected species, although many are smuggled out and others are exported with false declarations.

IUCN has expressed concern as well. Most live birds exported come from the family *Psittacidae* — mainly cockatoos, lorries and parrots — few of which are protected by law. There are 75 species of *Psittacidae* in Indonesia, of which 61 are native, and only four are legally protected. Yet these four are neither the rarest nor the most endangered. Many species are confined to small islands and are therefore very vulnerable.

Permits issued for the export of cockatoos increased from 2800 in 1971 to 8800 in 1977, but these figures represent only the tip of the iceberg. There is also considerable traffic in birds-of-paradise skins from Irian Jaya, with as many as 2000 a month being exported from Merauke alone.

Skins fetch between 14,000 and 15,000 rupees each in Merauke and 20,000 to 25,000 rupees in Jakarta — equal to a month's wages.

Now that Indonesia is a party to the Convention on International Trade in Endangered Species, all 'unconventional' trafficking should cease.

ESTUARY SAVED FOR WILDLIFE

ONE of Europe's most important waterfowl habitats has been saved. 2300 hectares of the Ribble Estuary have been bought back from agricultural developers at a cost of £1.75 million.

The Estuary, made up of mud flats and salt marsh, is one of the most important sites in Europe for migrant waders and supports a large native breeding community which would disappear if the marsh was reclaimed.

In January this year the Nature Conservancy Council put in a compulsory purchase order for the land, but following talks it was not necessary to proceed with it.

The Department of the Environment, which helped purchase the land, has agreed to designate it as a National Nature Reserve.

• For further facts on this issue, see the July/August 1978 *Bulletin*.

Hot summer— Antarctica sweats it out

WHILE much of the northern hemisphere as far south as the Middle East had an abnormally cold winter, down in Antarctica it was almost hot.

Granted it was then midsummer there, but temperatures of above 9 degrees centigrade at McMurdo Sound are 'really exceptional'.

Monitoring of the atmosphere by the *Global Atmospheric Research Programme* has begun. Will it conclude that there is more to the Antarctic heatwave than just the usual vagaries of the weather?

If a new pattern is emerging the Antarctic ice cap could melt. Then we would be truly sunk.

Jumbo-sized blunder

IN the first print-run of the *March Bulletin*, we said that 'around 50% of the world trade in ivory comes through Hong Kong — 470,000,000 tonnes in 1977'.

This jumbo-sized figure should have read 470 tonnes. We apologize for any concern this may have caused the elephant world.

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