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## Viewpoint

### Forest plantations and nature conservation

An area of increasing conflict between foresters and conservationists, particularly in the tropics, stems from the efforts of foresters to establish timber plantations, usually consisting of only one fast-growing exotic species.

Such plantations are often established in substitution for native mixed forests in which the potential for producing useful wood products is considered low but which often possess a fauna and flora of great interest and scientific value. Commercial plantations are justified to provide more raw material for the various forest industries, in particular the pulp and paper industry, compressed woods and other boards, charcoal, firewood and, of course, timber.

Conservationists tend to object to this substitution since it usually starts or completes the destruction of the highly interesting natural forests which frequently include the last remnants of various species of plants and animals. Accusations of creating "biological deserts" have been levelled, in addition to pointing out the large risks involved in the promotion of mono-cultures that could easily fall victim to destructive pests (fungi, insects, etc.) or destructive fires. The long-term deterioration of soil has also been a subject of controversy and such degradation has occurred, particularly when pines or other conifers have replaced mixed broad-leaved species. In some cases adverse effects on the water regime have been indicated. But more than anything else, conservationists object to the "homogenization" of a highly diversified ecosystem towards a single species plantation with all the consequences that this may have when natural diversity is sacrificed.

Foresters, however, can claim success in the establishment of plantations and as a result a plantation "policy" has been actively promoted by almost every government, with active involvement from international forestry organizations, and in particular the FAO Department of Forestry. In fact, a wealth of information already exists on the establishment of plantations. Spectacular success has been described for plantations in Chile, southern Brazil, northern and central Argentina, New Zealand, Australia, Kenya, Zambia, Java and Morocco, to cite only a few tropical and sub-tropical countries. Best known among the trees planted have been pines and eucalyptus, poplars, and teak. Many more species are being cultivated, and tested.

No-one will deny the success of many of the plantations, which have become the basis of important industries, providing raw material and employment for thousands of workers. After all, foresters argue (and often with good reason), there is no real point in criticizing plantations of exotic timber species when we accept

such plantation crops as rubber, oil, cacao, palm, coffee, or bananas — which often constitute the main source of income of various countries where they have been introduced. Is not a tree plantation similar to an agricultural crop, where we know and cope with pests and other adverse factors?

These few arguments summarize the controversy. Clearly, one must avoid oversimplifications and broad generalizations. Each case must be considered separately and there is no room for emotional, unsubstantiated viewpoints.

The following suggestions are therefore advanced with the hope that they may lead to a common platform which meets the interests of both groups. Establishing plantations can achieve a fundamental objective of conservation, i.e. to preserve diversity and choice of options, since carefully established plantations contribute towards conservation objectives by relieving the present pressure exerted against mixed heterogeneous broad-leaved forests, which are often destroyed or highly degraded to meet demands for timber, firewood and other forest products. However, no plantations should be established without full knowledge of the suitability of the species selected in relation to the prevalent climatic, edaphic, social and economic conditions of a region, to assure the maximum chance for success. It is inexcusable to spend time, money and valuable technical resources in establishing plantations which have little chance to succeed. Fortunately this is nowadays less prevalent. However in Latin America, for example, Spanish Cedar (*Cedrela* spp) and Mahogany (*Swietenia macrophylla*) are still widely planted without having solved the well-known problem of the destructive shoot borer larvae (*Hypsipyla grandella*), even if it appears they could successfully be replaced by *Toona ciliata*, the Asian counterpart of Spanish Cedar which so far has been resistant to the shoot borer. What is particularly disheartening is that the same mistakes are repeated year after year.

As far as possible — and usually the possibilities exist — plantations should not be at the expense of natural forests, especially if these natural forests have a high scientific educational, recreational or protection value or potential. In many areas forests were cleared long ago to create pasture or farm lands. These have subsequently been abandoned as fertility declined, but their sites remain suitable for forest plantations. Admittedly previously undisturbed forest soil often presents a better structure and an inherent fertility that helps initial growth of plantations but this is not essential to plantation success. The prospects for establishing plantations on nearby savannas also needs serious consideration, since many of these once supported natural forests. Some of the experiences we are gathering show that precisely on these savanna or degraded soils, many of them hitherto considered as very unproductive, great successes have been achieved. This has been demonstrated in southern Brazil on abandoned coffee soils and in Venezuela on infertile sandy savannas. As these experiences show, good preparation of the land is necessary — such as ploughing, careful fertilization in combination with the preparation of the earth balls that go with the seedlings, and even carefully controlled burning in some cases, to achieve success. There may even be an additional bonus: the weeding problems in the early years of the plantations established on poor savannas or degraded pasture or farm lands are considerably less than in forestry areas. One good example has been provided by the large (over 20,000 hectares) and highly mechanized plantation of Caribbean pine (*Pinus caribaea*) established in south east Venezuela on sandy savannas about 50 km. north of the Orinoco, close to the new city of Ciudad Ordaz.

Wildlife in plantations may sometimes grow, thrive, and constitute an additional value. Recent research in some plantations shows that the wildlife of some *Radiata* pine forests does not differ substantially from that of nearby natural vegetation. For the Venezuelan

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example cited above, a very great increase in wildlife has actually taken place in the pine plantations including the arrival of predators. Properly managed, this wildlife resource may constitute an additional source of pride and even economic revenue for the area.

The fact that a hundred hectares of a well-managed plantation can sometimes provide more utilizable wood products than thousands of hectares of natural forests, considering the necessities of local populations, should not be overlooked. Plantations, particularly if established on poor soils, should therefore greatly help to relieve the pressure on natural forests. This cannot be over-emphasized. Those promoting plantations can then also demonstrate conservation aims through other conservation action such as helping to set up reserves in nearby natural forests, wetlands, worthwhile savannas or other interesting areas, or in contributing towards additional activities that serve the cause of conservation.

There need not be a conflict between conservationists and plantation foresters. If the common objective of conservation is emphasized they could support each other in their respective aims with great mutual benefit to each other's activities. *Gerardo Budowski.*

### ***IUCN statement to the International Whaling Commission***

*The following statement was presented by IUCN at the 26th annual meeting of the International Whaling Commission, London, 24-28 June 1974.*

1. IUCN reaffirms its support for the resolution adopted by the UN Conference on the Human Environment, held in Stockholm in 1972, that calls for a strengthening of the International Whaling Commission, increased international research effort on whales, and an international agreement under the auspices of the IWC for a ten-year moratorium on whaling. The moratorium is envisaged as providing a period in which present doubts on the interpretation of whale statistics and other data may be resolved. Continuation of whaling whilst these doubts are unresolved involves a risk of inadvertently passing a point of no return.

2. IUCN deplores the repudiation by two IWC members, under the ninety-day rule, of three major conservation agreements reached at the IWC meeting in 1973, thus flouting the majority decision of the Commission. IUCN considers that this action has undermined the authority of the Commission and has called into question the effectiveness of the IWC. It looks to the 1974 meeting of IWC to rectify the present unsatisfactory situation, as a matter of urgency. IUCN considers that, unless immediate and decisive action is taken, world opinion will demand the development of an alternative mechanism for the management and conservation of whales that is effective and that covers the whole resource.

3. IUCN reminds the Commission of conservation measures that must be maintained or introduced during any transition period leading to the moratorium. These include taking the best possible advice in setting quotas; bearing in mind the inter-relations between species and the marine ecosystem as a whole; sub-dividing regional quotas for species so as to avoid concentrating the catching effort in one or two areas; and rigid enforcement of the International Observer Scheme.

4. IUCN reiterates its concern that countries outside the IWC are carrying out whaling, apparently in increasing volume. It calls on the nations concerned to join the IWC as a matter of urgency and intends to use its best endeavours to bring this about.

5. IUCN views with apprehension the growing use of flags of convenience in fishing operations – especially in situations where fishing is regulated under multi-lateral agreements – and draws attention also to possible loopholes in management actions offered by "joint

ventures" involving whaling and fishing enterprises in member and non-member countries.

6. IUCN considers that a comprehensive, world programme of whale research is needed urgently. The programme should not depend on commercial interests but should use all sources of data. It should include studies of the biology of living whales, and should examine whale populations in the context of the marine ecosystem. In this connection, IUCN reminds the IWC of the proposals made at the 1972 meeting of the Commission, to strengthen the scientific competence of its secretariat, both in relation to research and to international whale management, and to promote a decade of cetacean research – two very commendable proposals on which little subsequent progress appears to have been made. A research programme of the magnitude called for will involve close collaboration between many interests including FAO, ACMRR, IUCN, IWC, UNEP and concerned Governments.

7. An initial series of projects for research on protected and endangered whales was discussed at a meeting of the IUCN Whale Specialist Group held at Morges in May 1974 and priorities were established. IUCN/WWF intend to seek funds to support programmes arising from the meeting. IUCN will publish within the next few months a review of the small whale fisheries of the world, which has been compiled under the auspices of its Whale Group, which represents a substantial and constructive contribution towards arrangements for a complete and continuing overview of the world's cetaceans.

### ***International Whaling Commission Meeting 1974***

The 26th meeting of the International Whaling Commission took place in London, 24-28 June 1974.

Brazil has now joined the IWC, which leaves four countries (Chile, Peru, Portugal and Spain) that take great whales but are not members of the Commission.

The 10-year moratorium was proposed but not put to the vote. An amendment was accepted that will classify all *stocks* of whales into one of 3 categories: (a) *initial management stocks*, which may be reduced in a controlled manner to achieve maximum sustained yield (m.s.y.) levels and then optimum levels as these are determined, (b) *sustained management stocks*, which should be maintained at or near m.s.y. levels and then optimum levels as these are determined, (c) *protection stocks*, which are below the level of sustained management stocks and which should be fully protected. Commercial whaling will be permitted on (a) and (b) stocks, subject to controls based on scientific advice. The IWC Scientific Committee will meet in the autumn to propose criteria for defining these categories and to provide advice (to be up-dated annually) on allocation of stocks to these categories. All necessary amendments to the IWC Schedule arising from these proposals are to be made at the 1975 meeting of the Commission.

In the Southern Hemisphere, catch quotas for 1974/75 were amended as follows: fin whales reduced by 450 to 1,000 whales, sei and Bryde's whales reduced by 500 to 4,000 whales, and minke whales increased by 2,000 to 7,000 whales (an increase in the Schedule, but a decrease in practice – 7,700 minke whales were taken in the Southern Hemisphere in the 1973/74 season). Sperm whale quotas (8,000 males and 5,000 females) remain unchanged. All quotas have been sub-divided into three regions, with provision for further sub-division of quotas next year on the basis of scientific advice. Regional division of quotas received virtually unanimous approval, fourteen countries were in favour with one abstention.

In the North Pacific, catch quotas for the 1975 season were amended as follows: fin whales reduced by 250 to 300 whales, sei and Bryde's whales reduced by 1,000

to 2,000 whales; sperm whale quotas (6,000 males and 4,000 females) remain unchanged and no sub-division into regional quotas was proposed.

The International Observer Scheme was reported to be operating satisfactorily. A budget was approved for an expanded secretariat, and provision made for early implementation of these proposals. The Schedule was amended to expand statistical data required from whale catching operations.

A working group will examine the International Convention for the Regulation of Whaling, 1946, and report to the next IWC meeting on the need for its revision.

Various Commissioners stressed the urgent need to implement the proposed decade of expanded cetacean research. Specific regional research proposals will be considered by two sub-committees of the Scientific Committee and their recommendations submitted to the next meeting of the IWC. The proceedings of the Commission's sub-committee meeting, in April, on the status of small cetaceans will be published (three Commissioners pledged funds that will cover 75 % of the estimated costs of publication).

Although it is disappointing that the blanket moratorium was not accepted, the new amendment that seeks to manage whale populations by individual stocks, to take account of management criteria in addition to the m.s.y. principle, and to accept moratorium on the whaling of seriously depleted whale stocks, is to be commended. Further reduction of quotas, and action to expand the IWC secretariat and to promote research are signs of renewed conservation momentum. The next meeting of the Commission on 23 June 1975 should prove to be of considerable significance.

Colin W. Holloway

## **Programme Activities**

### **Ecological Guidelines for South-east Asia areas**

The course of development in South-east Asia, may be significantly effected by two meetings which took place in Bandung, Indonesia, at the end of May and early in June.

The first, a regional meeting to discuss ecological guidelines for development in tropical forest areas in South-east Asia, was convened by IUCN in collaboration with the Government of Indonesia and under the sponsorship of UNEP. It was co-sponsored by FAO, UNDP, and UNESCO, and was supported by UNEP, the Swedish International Development Authority and WWF. The hosts were the Institute of Ecology, Padjadjaran University, Bandung.

Representatives from six countries of the region, Australia, Indonesia, Malaysia, Papua New Guinea, Philippines, and Thailand, took part in discussions designed to identify the ways in which ecology and the experience of ecologists could be used to advantage in the course of development work while the dangers of unforeseen side effects and irreversible damage are minimized.

Dr. J. B. Sumarlin, Minister of State and Chairman of the State Committee for the Environment of Indonesia, opened and closed the Conference, which was attended by Ministers, senior civil servants and heads of technical departments. A great variety and many shades of opinion were expressed in the course of the lively and constructive discussion. The countries represented have very different population densities, degrees of development, fertility of the soil and ways of life, but there was astonishing unanimity of viewpoints on the need for guidelines and the Conference had little difficulty in formulating the text of some 70 Guidelines which were approved at the final session. It was considered essential that ecological considerations should be taken into account as early as possible in the formulation of policies for land use and indeed, in formulating national goals.

The second Conference, held immediately afterwards, was for Indonesia alone. This meeting took the Guidelines as its starting point, and, after three days of discussion, made recommendations for action within Indonesia.

### **Recompensing developing countries for monitoring environmental quality**

In the complex debate that continues between the developed and developing nations, a number of proposals have been brought forward with a view to narrowing the economic gap between the rich and the poor countries. Of particular concern in the context of the environment are the two issues of "additionality" and "compensation" which relate specifically to environmental costs.

These issues surfaced during preparations for the UN Conference on the Human Environment (Stockholm, 1972). They have been explored by a small task force established under the aegis of the IUCN Commission on Environmental Policy, Law and Administration.

As a result, three papers have now been issued in the IUCN Environmental Policy and Law Paper series:

No. 5 *Source Book: Emergence of Proposals for Recompensing Developing Countries for Maintaining Environmental Quality*, compiled by Yvonne I. Nicholls.

This brings together extracts from key primary documents which illustrate the growing concern of the international community to mitigate the apprehensions felt by developing countries that measures to control environmental degradation and to enhance environmental quality will be detrimental to their development and trade. Special emphasis has been given to the evolution of the idea that developing countries should be compensated for the contributions they make to maintaining environmental quality.

No. 6 *Financing Environmental Measures in Developing Countries: the Principle of Additionality*, by Scott Macleod.

Here the development of the concept of "additionality" is reviewed in an attempt to document and clarify some of the conflicting interpretations and misunderstandings that now exist. The paper also explores whether the principle has any operational significance.

No. 4 *The Concept of Compensation in the Field of Trade and Environment*, by Shadia Schneider-Sawiris.

The third of these papers was published by IUCN in 1973. It examines the closely-linked concept of "compensation".

This group of papers is presented as a contribution towards defining the issues and alternatives with reference to relevant precedents and the difficult choices, largely political, that must be made. They are part of an attempt to clarify the concerns involved and to provide a background to the debates that will arise in various international gatherings.

### **Swiss zoologist joins staff as SSC Assistant Executive**

Dr. Pierre Hunkeler, a Swiss zoologist, has joined the IUCN Secretariat at Morges as Assistant Executive Officer, Survival Service Commission. He assumed his duties on 1 May.

Following completion of studies at the University of Neuchâtel in 1966, he became director of the Swiss Research Centre, Adiopodoumé, Ivory Coast. During this period he prepared his Doctoral thesis on cestode parasites of small mammals, and collaborated in ethological studies with Professor F. Bourlière and Dr. T. Struhsaker. From 1971 until joining IUCN's staff, he was coordinator of scientific information and a project manager for a Swiss pharmaceutical company. He is married and has two children.

### Education group holds 10th Conference

Continued efforts to strengthen training in environmental education techniques for teachers and modification of youth hostels to permit their use as field centres for education were among recommendations of the Northern Europe Committee of IUCN's Commission on Education, which held its 10th Conference at Glasgow, Scotland, 13-20 May.

Reports by Committee members led to agreement that environmental education is being satisfactorily promoted at the primary level, but that considerable work remains for other school levels in Northwest Europe.

Projects of the Group include an international training course for teachers in environmental education methodology to be held in Sweden next year, the collection of successful demonstration techniques used by schools to teach interactions and relationships, a survey of field study facilities, collection and dissemination of information on teacher training courses and workshops.

Officers elected by the Committee for the next year were Drs. J.-P. Doets (Netherlands), Chairman; Frede Lauritzen (Denmark), Vice-Chairman; Miss Carol Johnson (UK), Secretary; and Mrs. Anne von Hofsten (Sweden), Project Officer.

### Conservation Programme for 1974-1975

World Wildlife Fund has published its Conservation Programme for 1974-75. It lists 116 projects for World Conservation, for which WWF has a fund-raising target of over \$2 million.

IUCN provided scientific advice on these projects, and originated many of them.

Copies of the 32-page programme may be obtained from the World Wildlife Fund, 1110 Morges, Switzerland.

### Sirenia Specialist Group

The SSC has approved the formation of a Sirenia Specialist Group to focus attention on these marine mammals. Dr. Colin Bertram of Cambridge University has been appointed as Chairman.

He is currently reviewing priorities and conservation action needs for manatees and dugong.

### Environmental Conservation publishes its first issue

A new scientific journal, *Environmental Conservation*, published its first quarterly issue in June. Founded and edited by Prof. Nicholas Polunin, a member of IUCN's Commission on Ecology, the new journal is published by Elsevier Sequoia SA for the Foundation for Environmental Conservation. IUCN and the World Wildlife Fund are collaborating in the publication.

The Spring issue carried 8 major articles and 11 shorter reports, and included among its authors such distinguished experts as Prof. J. L. Cloudsley-Thompson, Prof. Paul R. Ehrlich, and Prof. John T. Edsall. Topics ranged from plastics in the marine environment to a thorough review of the hazards of nuclear fission power and the choice of alternatives.

Subscription price for 1974 is S.Fr. 120. Subscription orders and questions concerning advertising should be addressed to the publisher, Elsevier Sequoia SA, P.O. Box 851, 1001 Lausanne, Switzerland.

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

## Book Reviews

**Soepadmo, E. and Singh, K.G. (Eds) 1973. Proceedings of the Symposium on Biological Resources and National Development.** (May 1972). Malayan Nature Society, P.O. Box 750, Kuala Lumpur, \$ Malaysian 12.00, 177 pp.

This is the proceedings of what must have been an extremely impressive symposium, opened by the Minister of Primary Industries and closed by the Minister of Technology, Research and Local Government. The papers are grouped under Agricultural Aspects, Hydrology and Pollution, Forestry Aspects, Conservation and Development and Human Aspects. The standard is almost uniformly very high. A great deal of new work is presented as well as several review papers. It is extremely encouraging to see how fully Malaysian scientists understand the importance of conservation, the threat to natural resources and yet the pressures which are forcing government and commerce to exploit these resources at a very rapid rate. It is to be hoped that this symposium has added materially to the pool of facts and ideas which fuel the discussions between interested parties taking place in Malaysia, and that politicians will take practical heed of the vital importance of natural resource conservation and the need to sustain the yield of renewable resources which is here so articulately expressed. Malaysia, with the world's most complex and species rich ecosystems, has more to lose than anywhere else from overexploitation. There is still just time to save enough of her magnificent lowland dipterocarp rain forest ecosystems to save many plant and animal species from extinction. Continual informed pressure from her own scientists plus the speedy assistance of international agencies when called upon for advice are essential if posterity is to be handed down adequate samples of the vegetation and its dependent fauna. The Malayan Nature Society is to be congratulated on its successive initiatives in this field, and its officers are exhorted to continue their efforts. This symposium volume contains much which is of general interest to everyone concerned with tropical rain forest and at \$M 12 this book should be widely purchased within and outside the region. T. C. Whitmore

**Long, Gilbert (1974). Diagnostic phyto-écologique et aménagement du territoire. Vol. I. Principes généraux et Méthodes.** Paris: Masson & Co, Collection d'Ecologie. 252 pp.

This is the first of two volumes being produced by Dr. Gilbert Long, deputy director of the Centre National de la Recherche Scientifique at Montpellier. Here Dr. Long describes the methodology of the phyto-ecological school developed in Montpellier by Professor Louis Emberger and the usefulness of this approach to an understanding of relationships between the flora and vegetation on one hand and the physical constraints of the environment on the other. Equal attention is given to natural landscapes and those long modified by human activity. Emphasis is placed on the need to give attention to climate, geology, topography, soil and water relationships, as well as vegetation and human influence. The phyto-ecological maps included in the text are designed to present a variety of ecological information.

The second volume is expected to appear later in 1974 and will be concerned with practical applications of phyto-ecological diagnoses to the planning and management of land use.

It is apparent that those concerned with the application of ecological knowledge to the management and development of natural resources will find much useful information in these two volumes.

Raymond F. Dasmann