ISSN 0376-8929

Published Quarterly Volume 8, No. 2 – Summer 1981

Antifactor of the international Journal

The international Journal devoted to maintaining global viability through exposing and countering environmental deterioration resulting from human population-pressure and unwise technology

Founded and Edited by NICHOLAS POLUNIN

Conferences & Meetings Dr M.A. Farid Editorial Assistant Dr N.V.C. Polunin



Published for the FOUNDATION FOR ENVIRONMENTAL CONSERVATION by ELSEVIER SEQUOIA S.A.

ELSEVIER SEQUOIA S.A. Lausannend Switzerlande University Press



with the collaboration of the United Nations Environment Programme (UNEP) International Union for Conservation of Nature and Natural Resources (IUCN)

International Association for Ecology (INTECOL) International Conferences on Environmental Future (ICEFs) World Environment and Resources Council (WERC) and World Wildlife Fund (WWF)

ENVIRONMENTAL CONSERVATION

advocates timely action for the protection and amelioration of the environment of Man and Nature throughout the world: Topics range from pertinent case-histories of the past and present to rational use of resources, foreseeing ecological consequences, enlightened environmental policy, anti-pollution measures, low-impact development, environmental education and law, and ecologically sound management of all land and fresh water, sea and air, for the lasting future of Earth's fragile Biosphere.

The following are the main types of contributions which may be accepted for publication in this Journal: Survey articles on important aspects of its subject; Research papers whether basic or 'confirmatory'; Case-history accounts of wide significance and interest; Short Communications: reports, comments, news, notes; Ecosystems for Conservation: examples from around the

world;

Advisor

Animal Ecology: Prof. Raymond F. Dasmann (Santa Cruz, California)

Animal Impact: Prof. Jean Dorst (Paris, France)

Australasia: Dr Donald F. McMichael (Canberra City, Australia) Biological Productivity: Dr E. Barton Worthington (Nr Uckfield, England)

Biosphere Maintenance: Prof. Hon. Beatrice E. Willard (Boulder, Colorado)

Central America: Dr Anne LaBastille (Big Moose, N.Y.)

Climatic Variation: Provost F. Kenneth Hare (Toronto, Ontario)

Conservation Policy: Prof. Duncan Poore (Oxford, England) Economic Aspects: Prof. Marshall I. Goldman (Cambridge, Mass.) Ecosystems Research: vacant

Education and Training: Dr Jan Cerovsky (Praha, Czechoslovakia)

Endangered Biota and Ecosystems: Dr Norman Myers (Nairobi, Kenya)

Energy: Dr Amasa S. Bishop (Genolier, Switzerland)

Environmental Engineering: Prof. Philip H. Jones (Toronto, Ontario)

Evolutionary Ecology: vacant

Fresh Waters: Prof. W. Thomas Edmondson (Seattle, Washington) Geographical Aspects: Prof. Gilbert F. White (Boulder, Colorado)

Human Reactions: vacant Human Settlements: Dr Pierre Laconte (Louvain-la-Neuve,

Belgium)

I.C.E.Fs: Nicholas Polunin (Geneva, Switzerland)

Indian Subcontinent: Dr Jai Kishan Maheshwari (Lucknow, India)

Indian-Malaysian Wildlife: Dr G. M. Oza (Baroda, India) INTECOL: Prof. Amyan Macfadyen (Coleraine, N. Ireland) Island Ecosystems: Dr F. Raymond Fosberg (Washington, D.C.) Conferences & Meetings: summary reports; important prospects;

Reviews & Notices: of new books etc.

Founded and Edited by Nicholas Polunin Conferences & Meetings: Dr M. A. Farid Reviews & Notices: Miss C. A. Trangmar-Palmer Editorial Assistant: Dr N. V. C. Polunin

ADVISORY EDITORS

I.U.C.N.: Dr Lee M. Talbot (Gland, Switzerland) Land Use and Recovery: Prof. Kai Curry-Lindahl (Stockholm, Sweden)

Law and Enforcement: Prof. Homer G. Angelo (Davis, California) Marine Geology: Prof. Eric S. W. Simpson (Rondebosch, South Africa)

Marine Waters: Prof. G. Carleton Ray (Charlottesville, Virginia)

Medical Aspects: Dr Bent Juel-Jensen (Oxford, England) Meteorology and Climatology: Prof. Reid A. Bryson (Madison,

Wisconsin) Microbiological Implications: Prof. Donovan P. Kelly (Coventry, England)

Parks and Reserves: Prof. Jean-Paul Harroy (Bruxelles, Belgium) Pesticides and Toxicants: Dr Norman W. Moore (London, England)

Plant Ecology: Prof. Makoto Numata (Chiba, Japan)

Physics: Sir John Adams (Meyrin, Switzerland)

Pollutants and Disposal: Prof. Kenneth Mellanby (Abbots Ripton, England)

Population Impact: Prof. Paul R. Ehrlich (Stanford, California) Resources Conservation: Prof. S. Fred Singer (Charlottesville, Virginia)

Social Studies: Prof. Lynton K. Caldwell (Bloomington, Indiana) Soils and Erosion: Prof. Victor A. Kovda (Moscow, U.S.S.R.) South America: Dr José C. de Melo Carvalho (Rio de Janeiro, Brazil)

South-East Asia: Prof. Otto Soemarwoto (Bandung, Indonesia) South-West Asia: Christopher D. W. Savage (Petworth, England) Tourism and Recreation: Dr Michael B. Usher (York, England) U.N.E.P.: Dr Ruben Olembo (Nairobi, Kenya) W.E.R.C.: David Hughes-Evans (London, England)

W.W.F.: Dr Luc Hoffmann (Gland, Switzerland)

SUBMISSION OF MANUSCRIPTS

All contributions must be in precise English and original, submission of a 'manuscript' implying that it is unpublished and is not being considered contemporaneously for publication elsewhere. Manuscript (two copies, *including* one on light airmail paper) and allied materials should be sent to:

> Prof. Dr Nicholas Polunin, Editor ENVIRONMENTAL CONSERVATION 15 Chemin F.-Lehmann 1218 Grand-Saconnex Geneva, Switzerland

or to one of the Advisory Editors (listed above). There is a set of Instructions for Authors at the end of each issue; failure to follow these in reasonable degree may lead to, at best, protracted correspondence or return of a manuscript for restyling before it can be considered or even refereed.

PUBLISHING AND SUBSCRIPTION INFORMATION

Environmental Conservation is published by Elsevier Sequoia S.A., Lausanne, for the Foundation for Environmental Conservation, with the collaboration of the United Nations Environment Programme (UNEP), the International Union for Conservation of Nature and Natural Resources (IUCN), International Association for Ecology (INTECOL), International Conferences on Environmental Future (ICEFs), World Environment and Resources Council (WERC), World Wildlife Fund (WWF), and others. It is covered in about twelve international contents and abstracting journals emanating from Great Britain, the United States, Italy, and West Germany. Environmental Conservation is published quarterly, corresponding to the four seasons in the Northern Hemisphere. Size 28×20 cm, comprising at least 320 pages of text per annum. The volume subscription price for 1981 will be SFr. 140 (approx. US \$ 70) including postage. The ISSN is 0376-8929.

Subscription orders and inquiries should be sent to:

ENVIRONMENTAL CONSERVATION Elsevier Sequoia S.A. P.O. Box 851

1001 Lausanne 1, Switzerland.