ENVIRONMENT NEWSLETTER

Quarterly Newsletter of the South Pacific Regional Environment Programme

Contents:

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The SPREP ENVIRONMENT NEWSLETTER recommenced publication after having been in 'retirement' since issue No. 4 (March 1982). Commencing with issue N° 5 (April - June 1986), it has since been produced on a quarterly basis. News articles and comments are welcomed for future issues.

South Pacific Regional Environment Programme

(SPREP)

South Pacific Commission

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The Environment Newsletter is produced by the South Pacific Regional Environment Programme (SPREP), South Pacific Commission, Noumea, New Caledonia and reports on the various activities of the programme together with news of general environmental interest to readers in South Pacific countries.

SPREP's activities are co-ordinated by a member government Steering Committee with advice from the United Nations Environment Programme (UNEP), the Forum Secretariat, the Economic and Social Commission for Asia and the Pacific (ESCAP) and SPREP's host organisation, the South Pacific Commission (SPC).

The United Nations Environment Programme, through its Oceans and Coastal Areas Programme Activity Centre (OCA/PAC) based in Nairobi has, since SPREP's inception, given considerable financial support to the programme's activities.

Much of the work undertaken by SPREP and supported by UNEP involves utilising skills of the Universities and Training Institutions within the South Pacific, members of whom have recently formed an Association of South Pacific Environmental Institutions (ASPEI) to facilitate this work.

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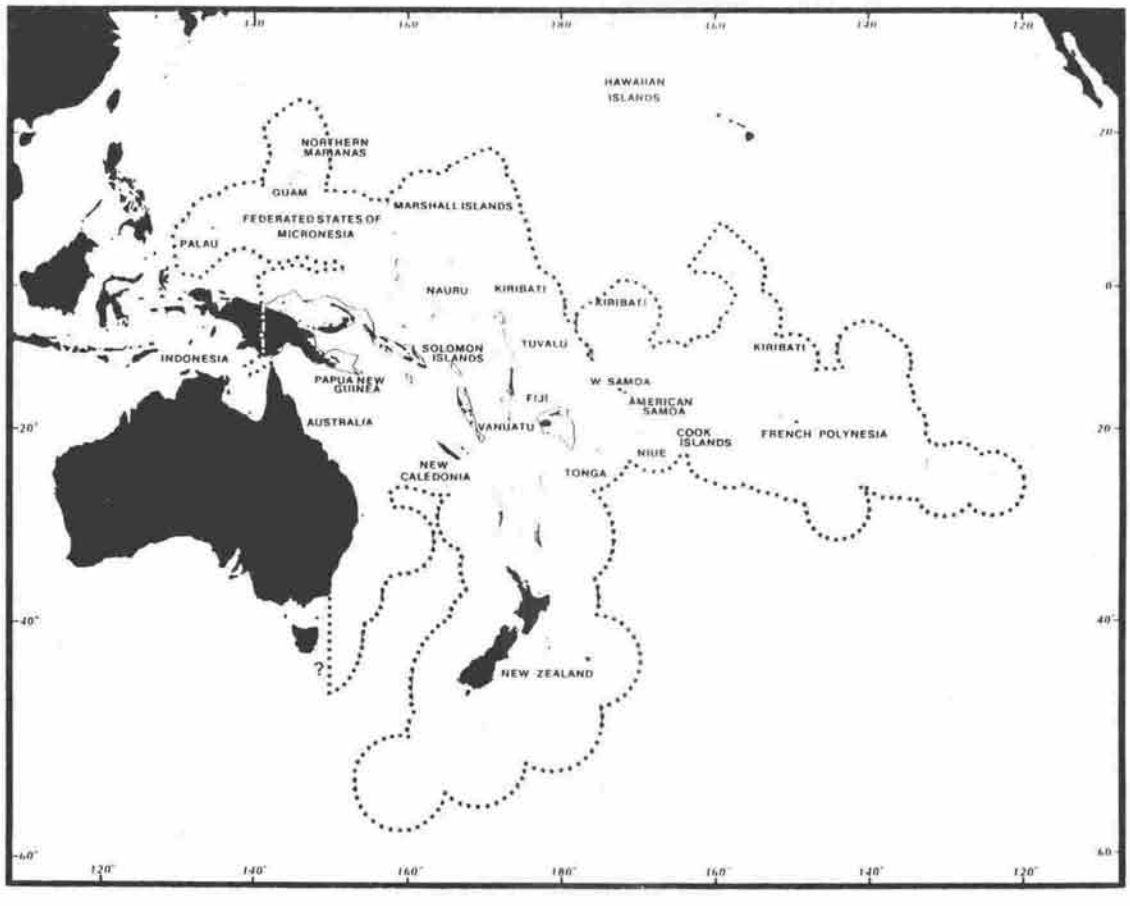
NEWS IN AND AROUND THE REGION

UPDATE ON 'SPREP' CONVENTION

With the depositing of its instrument of Ratification on 29 November 1988, the Federated States of Micronesia became the third State to ratify the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (the 'SPREP' Convention) and its associated protocols one, concerning co-operation in combating pollution emergencies in the South Pacific Region and the other, on prevention of pollution of the region by dumping.

Following four years of active negotiation, sixteen countries approved the Convention at a high-level meeting at SPC Heaquarters in Noumea in November 1986. At that time seven countries, namely Cook Islands, France, Marshall Islands, New Zealand, Palau, United States of America and Western Samoa became signatories to the Convention and since then other countries have signed and some have ratified. To actually enter into force, the Convention requires ten ratifications.



'SPREP' Convention Area

CANADA'S ANNOUNCEMENT RELATING TO ACCESSION TO SPREP CONVENTION WELCOMED BY SPREP

Canada's Deputy Prime Minister, the Honourable Don Mazankowski, has announced Canada's intention to accede to the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, the 'SPREP' Convention and to the Convention's protocol on pollution emergencies. In order to accede to the Convention and protocol, Canada will require the formal approval of three fourths of the parties to these agreements once the Convention is put into force.

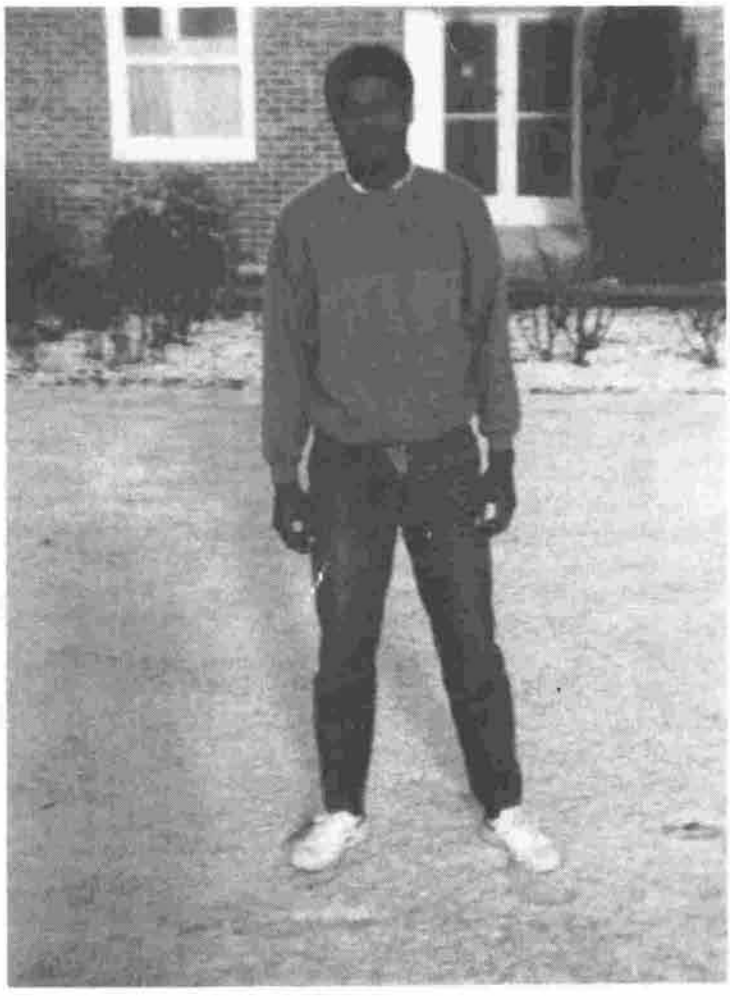
(Source: News Release, 8 July 1988, Canadian High Commission, Canberra, Australia.)

Convention for the Protection of the Natural Resources and Environment of the South Pacific Region and related Protocols

The present (December 1988) status of signature and ratification is as follows:

Parties	Signature	Ratification
Australia	24 November 1987	-
Cook Islands	25 November 1986	9 September 1987
Federated States of Micronesia	9 April 1987	29 November 1988
Fiji	-	-
France	25 November 1986	-
Kiribati	-	-
Marshall Islands	25 November 1986	4 May 1987
Nauru	15 April 1987	-
New Zealand	25 November 1986	-
Niue	-	-
Palau	25 November 1986	-
Papua New Guinea	3 November 1987	-
Solomon Islands	-	-
Tonga	-	-
Tuvalu	14 August 1987	-
United Kingdom	16 July 1987	-
United States of America	25 November 1986	-
Vanuatu	-	-
Western Samoa	25 November 1986	-

NEW ZEALAND TRAINING IN NATURAL RESOURCE MANAGEMENT PROVES VALUABLE TO SOUTH PACIFIC



Ernest Bani, Vanuatu's Principal Environment Officer, has recently completed the Post-Graduate Diploma in Natural Resource Management at the Centre for Resource Management (CRM) University of Canterbury and Lincoln College, New Zealand and reports on its value to his future work in Natural Resource Management in Vanuatu. Ernest hopes that others around the Pacific will also be encouraged to take up this very relevant one-year diploma training. He says "In the case of our island countries where natural resources are scarce the emphasis on resource management is important, particularly with the rapid growth of population and resource development and exploitation". As the only student in his year from a South Pacific Island country, he found the course very useful, the staff very helpful and always prepared to discuss any student's problems.

The course is based on three compulsory and two optional areas of study. The compulsory course Resources, Environment and People contains essential information on patterns of resource use; the causes and symptoms of impact on the biosphere; and the ecological and thermodynamic principles that might be applied to management of resources. Ernest saw particular relevance in the fact that the course "also incorporates the Maori cultural issues in relation to New Zealand natural resources ... (and) ... what is being studied here signifies the important methods by which New Zealand natural resources were preserved in the past by the Maori as opposed to the modern system of resource management and conservation". He found that "the Maori traditional conservation methods are not very different to our own (Vanuatuan) traditional conservation methods ... (and) ... that the incorporation of traditional values into modern development of natural resources would be very useful to developing conservation strategies. Thus, all cultural and traditional values of the resources should be taken into account."

Other areas of study included Natural Resource Economics incorporating the economics of stock and renewable resources and environmental pollution; institutional aspects of resource utilisation; and policy analysis. Of particular value to future development of management strategies and to critical analysis of natural resource management policies was the subject titled Natural Resource Policy which Ernest believed was beneficial in improving his undertstanding in assessing and evaluating political, social and cultural issues associated with his own countries natural resources.

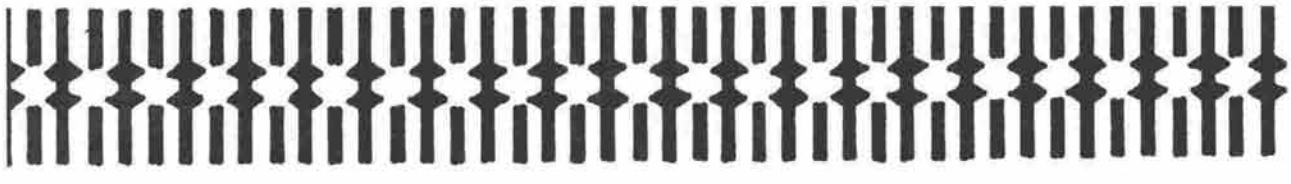
As land is a particularly important resource in Vanuatu and on other islands in the Pacific, the subjects studied under Land Classification and Utilisation proved invaluable. The elements of soils and landscape survey; mapping; systems of classification of land and land-use; concepts of land capability and land suitability for activities such as forestry, agriculture, conservation, recreation etc. - all served to better equip him to ensure that natural resources in Vanuatu are maintained and used wisely.

Coastal Studies, quite naturally proved valuable to an island inhabitant. As Ernest stated this "is important to our island countries in that most of the people live along and around the coast and use the beaches and coastal resources for various purposes ... Many of our coastal beaches have been eroded by development-related impacts. These impacts will increase so that shorelines and the adjacent seabeds can be seen as subject to both increasing pressure of use for an often conflicting range of purposes and to growing desires for conservation of coastal resources." The risreof sea-level due to the "Greenhouse Effect" and studies of river inputs into beach systems also were especially relevant.

Ernest concluded by saying:

> "I would recommend this course to any other Pacific island student who may have interest or who is already working for his country's Conservation or Environmental Management Department and who needs more specialised training in the field of natural resource management."

(Source: Report to SPREP by Mr E. Bani, Environment Unit, Ministry of Lands, Minerals and Fisheries, Port Vila, Vanuatu on completion of the Post-Graduate Diploma in Natural Resource Management, University of Canterbury and Lincoln College, New Zealand, 1988)



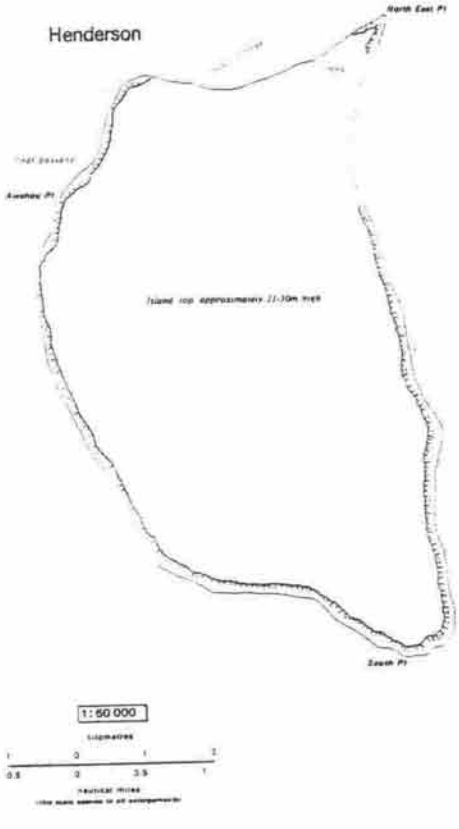
DETERIORATION OF NATURAL HABITATS REDUCES BIRD SPECIES

The International Council for Bird Preservation (ICPB) reports that a recent study has shown that, in the space of a decade, the number of threatened bird species in danger of extinction has increased in alarming proportions. Out of approximately 9 000 existing bird species worldwide, over 1 000 are now considered to be at risk of extinction, reflecting also accelerated deterioration of the world's natural habitats.

(Source: Naturopa : Newsletter - Nature and Environment, N° 88, 7/8)

PACIFIC ISLAND PLACED ON WORLD HERITAGE LIST FOR PROTECTION

At its 12th session in December 1988 held in Brasilia, the World Heritage Committee added 5 additional sites to its World Heritage List, one of which was the small South Pacific island named Henderson, part of the Pitcairn group. World Heritage listing places on the country concerned, in this case the United Kingdom, an obligation to ensure environmental protection of the listed site. In its role as technical adviser on natural sites to the World Heritage Committee, the International Union for the Conservation of Nature and Natural Resources (IUCN) assesses and advises on the relative merits of including sites on this important list. So far 68 natural sites and 247 cultural properties have been listed worldwide to ensure their protection for the benefit of future generations.



Henderson is a 30 square kilometre elevated atoll, the largest of the Pitcairn Islands and the home to two species of land bird; a flightless rail and the green fruit pigeon. The Pitcairn Islanders visit Henderson to collect *miro* wood which they use for carving. The island's environmental integrity was threatened in 1983 when permission was sought by an American to build an airstrip on the island. The British Government refused permission and protection has now been more firmly secured through the island's World Heritage Listing.

REMOTE SENSING PROGRAMME ESTABLISHED IN SOUTH PACIFIC

A UNDP/ESCAP Remote Sensing Sub-Programme, based at the Institute of Natural Resources of the University of the South Pacific (USP) in Suva, Fiji, has recently been established to contribute to the self-reliance of countries in the region in the inventory, mapping, development and management of their natural resources and in environmental monitoring using appropriate air photo interpretation and remote sensing techniques. A marine mapping programme will be actively pursued in recognition of the importance to the islands of shallow water as a major resource.

The programme's immediate objectives are:

- To provide training schemes in efficient use of remote sensing techniques for the assessment and management of natural resources, natural hazards forecasting and environmental monitoring,
- to organise workshops and study tours,
- to establish a regional information service to promote the transfer of scientific knowledge and technology,
- to identify and promote regional co-operation in joint research projects and joint pilot application projects,
- to promote co-operation among national centres and/or facilities within the region and provide technical advice to new centres.

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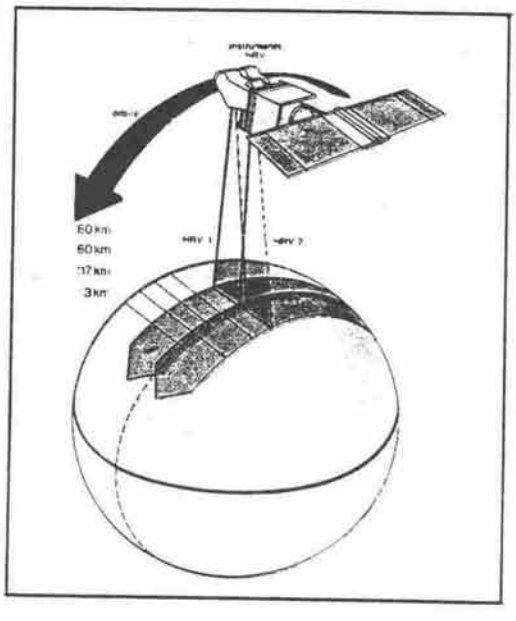


SPREP WORKS WITH EAST-WEST CENTER ON PROJECTS SUPPORTED BY THE MACARTHUR FOUNDATION

A generous grant for the Conservation of Biological Diversity in Tropical Ecosystems in Pacific Islands from the John D. and Catherine T. MacArthur Foundation has enabled SPREP and the East-West Center to undertake further co-operative environmental protection projects.

Marshall Islands Protected Area Study

The major activity of the first year (1988) was a survey of several designated atolls and one island in response to a request from the Republic of the Marshall Islands for assistance in laying groundwork for a system of protected areas. As the request for assistance had been put to both the East-West Center and to SPREP, it was an obvious choice on which to undertake a collaborative exercise with MacArthur Foundation funds. Professional collaboration also involved the US Army Corps of Engineers, the National Marine Fisheries Service, and the US Fish and Wildlife Service, thus "extending" the MacArthur funding by the provision of free scientific expertise resulting in a multi-disciplinary team made up of a botanist, general ornithologist/ecologist, marine science/coral reef specialist, turtle/fisheries specialist, anthropologist, and protected area specialist. A valuable resource base was obtained from an earlier Marshall Islands report produced by Dr F.R. Fosberg, Smithsonian Emeritus following his work in the 1950's and his recent update. The Marshallese government provided their new patrol boat for the month-long field work and included several Marshallese counterparts on the study trip. Work was undertaken during September and concentrated on the drier, north-east atolls least disturbed by human activity, the permission for this work having earlier been obtained from the landowners concerned.

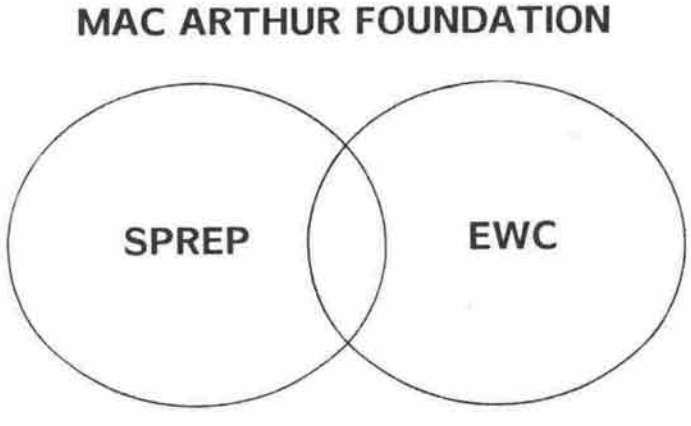
The study was particularly timely in view of two major threats to these tropical island ecosystems; one involving a proposed solid waste dump project at Taongi Atoll, an atoll which the survey team gave the highest rating for total protection, and another relating to a series of resort hotels in the atolls.

Findings from the survey include new plant records, a number of significant and previously unknown sites of cultural and historical importance and the possibility that two of the atolls (Taongi and Bikar) may be worthy of World Heritage status. Recommendations from the survey include the allocation of protected area categories for five uninhabited atolls, one inhabited atoll and one island together with the outlining of associated legislation and implementation steps, for presentation to the Marshall Islands government.

Environmental Education - Curriculum Development

The East-West Center and SPREP also collaborated in strengthening environmental content in school curricula when the East-West Center provided two resource people to the Regional Environmental Education Curriculum Workshop jointly organised by SPREP/USP's Institute of Education (IOE)/and United Nations Environment Programme (UNEP) in July 1988. The East-West Center was able to use this opportunity to discuss with participating teachers and curriculum developers, especially those from Micronesia, their needs for future curriculum support by the MacArthur Foundation. Emanating from this contact has been a pilot environmental education curriculum project currently being undertaken in Palau.

These are just two of the activities involving a collaborative SPREP/East-West Center exercise with financial assistance from the MacArthur Foundation in which available resources have been very effectively multiplied. There are other activities currently under discussion for similar joint undertakings of which the environment of the region will be the beneficiary.



FEATURE

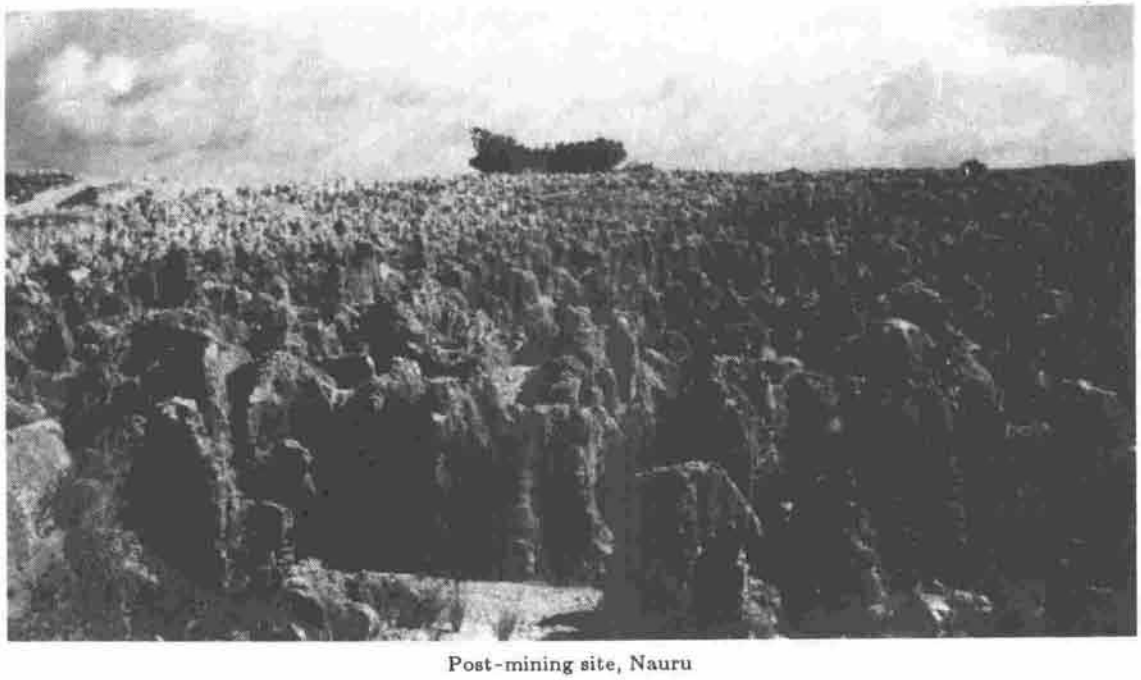
FOR RICHER, FOR POORER: THE PHOSPHATE ISLANDS OF THE PACIFIC

PHOSPHATES AND PHOSPHATE ISLANDS

A number of Pacific islands have been the scene of intensive tricalcium phosphate mining since the early 20th century. The best known and richest deposits are on Makatea in French Polynesia, Nauru (Republic of Nauru) and Banaba, which is part of Kiribati.

The tricalcium phosphate or bone phosphate of lime (BPL) contents of the phosphate deposits of the Pacific can be in excess of 84% before impureties are processed out. Tricalcium phosphate is not soluble enough in its natural state to be directly absorbed by plants as a source of the phosphorus essential for their growth. It is therefore converted into a more soluble substance, known as superphosphate, by adding sulphuric acid. The exposure to the open air of materials with a high phosphorus content overlying a limestone layer has produced similar types of calcium phosphates in various Pacific islands.

Nauru, Banaba, and Makatea are high coral islands, also described as uplifted atolls. The land environment on these islands is more varied than that found on the true atolls; in their natural state, the fauna and flora tend to be richer, although the patchy soils, irregular precipitation and, for islands such as Makatea, the risk of cyclones, are factors which restrict diversity. The phosphate occurs on these islands in often crumbly surface or subsurface deposits, nests and pits, from a few metres to a few dozen metres in depth, separated by walls and pinnacles of very hard dolomitic limestone. The plant cover has to be destroyed and the mining zone laid bare before ore-raising can begin. The degree of destruction of the vital components of the environment, the soils, the vegetation and to some extent also the wildlife they sustain, is therefore directly related to the surface area of the deposits: the richer these were the more intensive has been their exploitation.



Post-mining site, Nauru

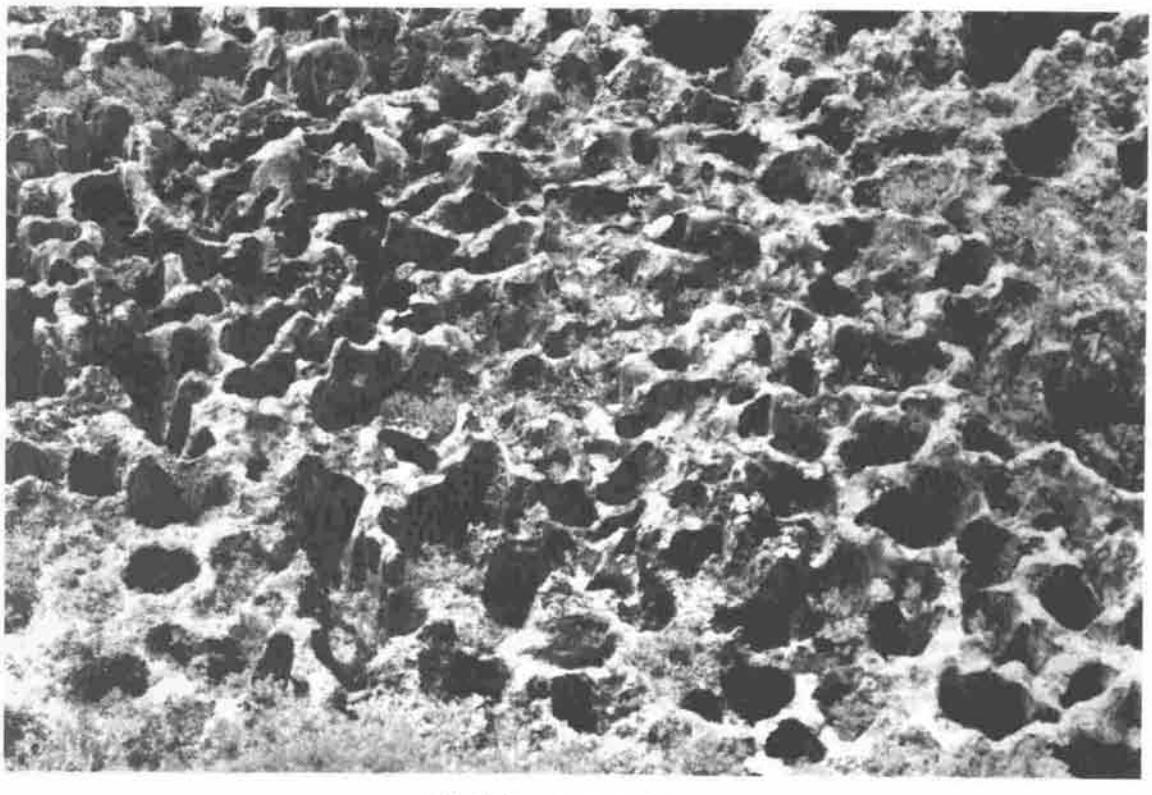
ATTACKED ON ALL FRONTS

Mining has replaced the original landscape of these islands with a desert of stone, a chaotic wasteland of walls, towers and pinnacles of very hard limestone, interspersed with more or less intact rocky patches. Whatever the techniques used, there was never any alternative to destroying the vegetation cover before mining could start.

The survival of the plant cover was finely balanced, as confirmed by the shallow soils and the many reports of the partial disappearance of certain species during the most severe droughts. When the soils were stripped off following the destruction of the plant cover prior to extraction, the resource represented by the thin humus-rich layer of top-soil was lost forever.

The mining industry swelled freshwater needs with the large labour force it had to provide for, and the systematic catchment of rainwater was not always adequate. A theory has developed that mining has had an indirect impact on the quantities of water retained, especially on Nauru, while four of the seven known traditional wells on Banaba are said to have disappeared as a result of this activity. The damage to the natural environment, which may be associated, as in other Pacific islands, with that caused by the introduced plants favoured and propagated by mining activities, has led to deterioration of the human environment.

Now partly uninhabitable, Makatea and Banaba no longer justify regular and frequent communications with the outside world for their tiny populations. They appear to have been deliberately left to fend for themselves. The vigorous population revival recorded in Nauru influences that island's circumstances. Nauru has been an independent republic since 1968 and its citizens' control over their mineral wealth has put them in a position to plan their island's rehabilitation and manage the profits from its sole resource for the future.



Partially revegetated site

NATURE RESPONDS, BUT THERE ARE LIMITS TO HER GENEROSITY

Far too little, much too late can describe the action taken to protect, conserve or rehabilitate the environment while deposits were mined; in most islands, in fact, nothing whatsoever was done. Bearing in mind that no help has been given, the vegetation has shown an astonishing capacity for natural regeneration after being totally destroyed. Mining sites are recolonised in the first twenty years by exotic grasses, rushes and ferns, which spread readily. Over the following two decades these are replaced by pioneering woody shrubs, which encourage the reappearance of shade-tolerant plants. From forty to eighty years on, more and more indigenous species reclaim sites on the pinnacles and loose slopes. Generally speaking, the exotic plants which open the way for the recolonisation of mining areas are fairly quickly replaced by the hardiest ubiquists among the indigenous ligneous shrubs.

The recolonisation which has taken place on Nauru and Makatea is therefore comparable in many respects but detailed observation and information is not available for Banaba. In an environment very comparable to Nauru's and under a very similar climate, free from cyclones, the evidence would nevertheless suggest that a similar series of events has taken place with the same plants. Ferns play an active part in the recolonisation of the post-mining wilderness. Of the plants appearing in the new vegetation, a number are common to Nauru and Makatea.

The land fauna would appear to have suffered comparatively little from the modification of habitats caused by mining. The capacity for rapid adaptation shown by some of the birds populating small islands, whose habitats may suffer rapid and drastic change, may explain the relative immunity of the avifauna. The Noddy tern, an indigenous bird inhabiting the original plateau forests and the rocky areas spared by mining on Nauru, is thought to have been significantly reduced in numbers because of the shrinkage in its natural habitats. Allowance must however be made for the fact that these seabirds are hunted by the Nauruans.

FROM DESERTION TO REHABILITATION

Protection of the environment's remaining resources and the rehabilitation of old workings were clearly not major considerations for the interests which exploited phosphates in the Pacific islands for decades. The sheer scale and spectacular nature of the environmental damage have, however, inevitably been a source of concern for the inhabitants, despite the compensation obtained, and have prompted other observers to ponder what the future holds for these island environments.

Reports prepared on Nauru (1953, 1966, 1987) concluded that the general rehabilitation of the areas devastated by mining was technically possible but impossible in practice. These old workings could however be partially redeveloped for housing schemes, public facilities and certain crops. The rapid growth of Nauru's population should be an incentive for investigating the possibilities of extending the croplands, but it would be futile to hope that the whole plateau could be made agriculturally usable.

In some sectors, the pinnacles could be knocked down, crushed, then levelled and covered with imported and/or locally available soil. A strict zoning system should be applied to the proposed schemes, so that a population enjoying vigorous demographic expansion may exercise optimum management over the limited available space.

In 1988, a government Commission of Enquiry was continuing to develop arguments and explore legal avenues whereby Nauru could obtain compensation from the countries which had mined phosphates up to Independence and to investigate the technical requirements for rehabilitation. Meanwhile, in the Anibare and Ijuw districts in north-eastern Nauru, the tall tomano trees in the few remaining hectares of original forest on the "topside" (plateau) were being ripped out by bulldozers.

Mining underway on the few remaining hectares of original forest, Nauru

Obstinacy is almost the only way to describe current plans for resuming mining of the residual phosphate (2 to 10%) in old workings. The Commission considers that such a resumption of mining would be a technically beneficial step toward restoring the vegetation.

Kiribati lacks a structure comparable to the Nauru Government's Commission of Enquiry and equally detailed information about projects relating to the future of Banaba is therefore not available. Whereas some of the few souls who stayed behind on Banaba have apparently found work providing limited maintenance for the plant and machinery, the same cannot be said of Makatea whose twenty-seven inhabitants today live a life of almost total isolation. Promises of new agricultural activities would appear hardly more realistic than talking about the possible development of tourism for which an island without beaches would seem somewhat unsuitable. Where Makatea is concerned, the situation has been compounded by the failure to reinvest any of the quite considerable resources generated by mining in environmental rehabilitation or new economic activities. For these countries, therefore, which are too small to cope with the consequences of their wealth, phosphate mining has not only wreaked havoc on the environment and the traditional economy, but has also torn apart the fabric of their societies.

PLANNED MANAGEMENT FOR NEW DEPOSITS? MATAHIVA, TUAMOTU GROUP

It is unlikely that any new phosphate deposits will be discovered on the islands, or parts of islands, in the tropical Pacific which are structurally comparable to Nauru, Banaba and Makatea, but some true atolls may contain such wealth. Gone are the days when deposits of this kind could be exploited under the circumstances which prevailed early in the century. Protection of the environment has to some extent become a legal obligation, which pressure groups are trying to enforce. In 1966, the island countries and territories of the Pacific adopted a Convention laying down a regional policy in this respect. Consideration can therefore be given to the way these resources should be managed to protect the environment, the economy and the society, for those atolls that sustain a permanent population.

The atoll of Matahiva in the western Tuamotus, 330 km north of Tahiti, contains a phosphate deposit with an average P_2O_5 content of 37.5% (82% BPL), whose reserves are estimated at between 14 and 20 million tonnes. The original feature of this deposit is that it occupies a section of the lagoon area (approximately 1/5) lying under 3 metres of water and 7 metres of mud, sand and other materials on average. Almost 700 of the 1 600 or so hectares of emerged land are occupied by a thriving coconut grove.

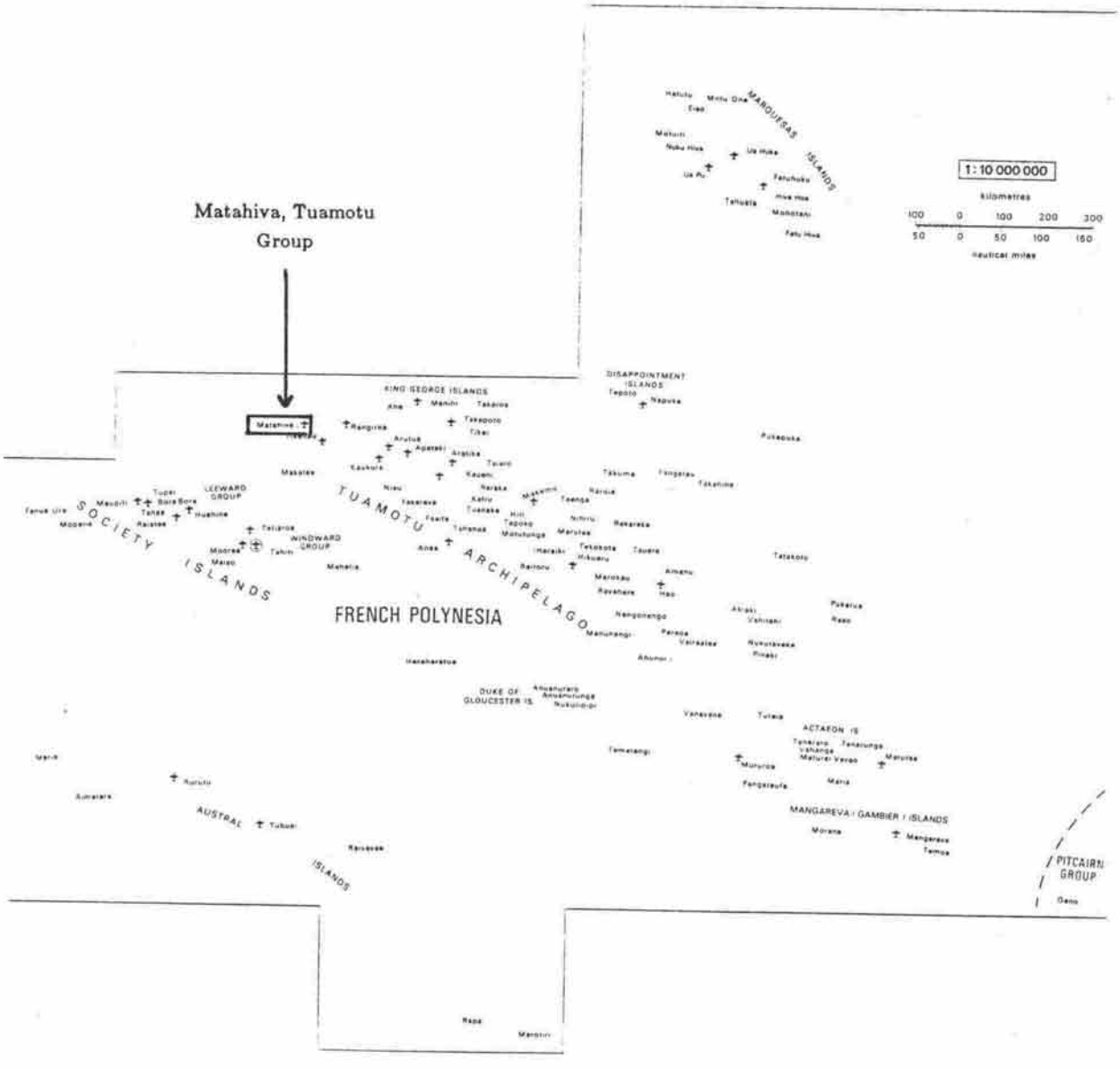
Fish stocks are not abundant in the central part of the lagoon. The richer grounds lie near the main passage to the west, close to the *hoa*, channels through which exchange with the ocean takes place, which are arrayed to the south of the emerged rim. Here are found the fish traps which account for almost all of the fishing done on the atoll. The same western part of the lagoon is also the location of the phosphate deposit and this is where the most severe inroads on the environment will occur, should mining commence.

As much as 35 million square metres of material could need to be shifted to extract less than 11 million tonnes of phosphate. The ore would be removed by dredges. The mining would take place in successively isolated pools, filled in with barren material with a low mineral content produced by the process of washing the ore, from which the salt would have to be removed. A substantial supply of freshwater would therefore be required. The washing, drying and storage facilities would be constructed in the western part of the atoll, which would also be the site of the loading equipment, workshops, staff accommodation and the shared facilities.

In 1983, the population consisted of 215 inhabitants forming 40 households, most of whom lived in a single large village near the main passage in the western part of the atoll, close to the landing strip. A new village should therefore be planned to the south, in the *hoa* area. As for the development directly related to mining, this resettlement proposal should not overlook the cyclone hazard. On atolls, the risk of cyclones exposes land-based facilities to the possibility of severe damage through the action of the sea. This risk should therefore be given proper consideration in the design of such projects.

It is also important to realise that the population's only current resources are those yielded by the environment. Any changes in this environment due to mining would have a direct impact on the living conditions of the atoll's inhabitants. Although few coconut trees would have to be cut down, copra production would nevertheless suffer.

Thirteen fish traps today produce a catch of 60 or so tonnes for the Tahiti market; six of these are located in the passage and would be destroyed to make way for the dredges. Mining would from then onwards make any kind of fishing impossible in this area. The upheaval suggested by the coral formations over 1/5 of the lagoon area would be likely to provoke an outbreak of fish poisoning (ciguatera), as has often been observed elsewhere in similar circumstances despite the precautions taken to maintain water exchanges with the ocean. Consequently, the toxic fish would become unsalable and the local population would lose an important food resource, while the richest part of the lagoon, ecologically speaking, would be destroyed. Where the land environment as such is concerned, the preventive action required relates to the foreseeable damage to the plant cover and water table, and to the changes to the living environment consequent upon the activities of the mine and the presence of a population 3 to 7 times bigger than the present one. This action includes the catchment of rainwater in addition to the construction of a sea water desalination plant, strict control of pollution by petroleum products, construction of a purification plant and a supervised refuse disposal site, monitoring of mosquito breeding grounds created by the substantial volume of freshwater effluent, and control of the rodents which could also proliferate in direct proportion to the amount of waste produced by a bigger population.



However, even if all the measures proposed in the impact studies are taken to extend maximum protection to the fragile natural environment of Matahiva, however, it is not difficult to imagine that this island, which could temporarily become the most populated atoll in the Tuamotus, would suffer serious distrubance if its phosphate deposits were to be mined. Lastly, possible new economic activities such as aquaculture and tourism should also be looked into before mining starts. Otherwise Matahiva is likely to be deserted once its deposit has been worked out, if it has not already been turned into a desert by the mining operations.

(Prepared for SPREP by J.-F. Dupon, ORSTOM, Papeete)

CONFERENCE ON NATURE CONSERVATION AND PROTECTED AREAS

Planning is well underway for the fourth in the series of protected area conferences for the region. The first and second such Conferences were held in New Zealand and Australia in 1975 and 1979 respectively and the third in Apia, Western Samoa in 1985.

The Third South Pacific National Parks and Reserves Conference was organised by SPREP in conjunction with the host country, Western Samoa, and the International Union for the Conservation of Nature and Natural Resources (IUCN), on the central theme of traditional knowledge and practice. A major *Action Strategy for Protected Areas in the South Pacific* emanated from this third Conference and has served to guide SPREP's protected area and conservation work over the past three years.

The fourth Conference, to be hosted by the Government of the Republic of Vanuatu, is scheduled for September 1989 on the theme of 'Nature Conservation in Sustaining Pacific Life' and will be organised jointly by SPREP, IUCN and WWF with possible support from other international and regional organisations. For further information, please contact the SPREP Secretariat.

CALENDAR OF EVENTS

WESTERN PACIFIC INTERNATIONAL, MEETING AND WORKSHOP ON TOGA-COARE — 24 - 30 May 1989

The SURTROPAC group of the Centre ORSTOM de Nouméa, New Caledonia will host an international meeting on TOGA (Tropical Ocean and Global Atmosphere Program) followed by a workshop for the planning of the TOGA-COARE (Coupled Ocean-Atmosphere Response Equipment) in the western equatorial Pacific. This meeting/workshop will be jointly convened by ORSTOM and the University of Hawaii.

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SECOND INTERNATIONAL SEMINAR ON COASTAL PARKS AND PROTECTED AREAS, Florida (USA) and Yucatan (Mexico) — 14 May - 3 June 1989

The US National Park Service and the University of Miami's Rosenstiel School of Marine and Atmospheric Science (RSMAS) are offering an international seminar on coastal and marine protected areas. The seminar will be based in Miami and classroom activities will be held primarily on the RSMAS Campus. The organising theme for the seminar is "Management Planning and the Creation of Management Plans" for coastal protected sites in tropical settings. The programme will include the variety of subjects addressed in management planning, for example: resource management and restoration, facilities, interpretation and education, use zoning, research and monitoring, public participation, visitor management, tourism and carrying capacity, revenue generation, and staff training.

The seminar is designed for mid-career training of professionals who are employed in management, planning, research, or administration of coastal and/or marine parks or protected areas. Applicants are expected to have a University degree, or equivalent, as well as practical experience.

Contact:

John R. Clark
University of Miami-RSMAS
4600 Rickenbacker Causeway
MIAMI
Florida 33149
USA.

Telephone : (305) 361-4620

WORLD CONFERENCE ON TOURISM DEVELOPMENT AND THE ENVIRONMENT,
Santa Cruz, Tenerife, Canary Islands, Spain

29 May - 1 June 1989

Objectives of the meeting are (1) to gather experienced representatives of governments, tourism-travel related enterprises, leading educational institutions, scientific research establishments, corporations, trade associations and media, who are concerned for the progress of travel and tourism in a healthy environment; (2) to present information on environmentally sound tourism developments and exchange insights on constructive planning and management methods; (3) to develop practical proposals to protect the environment and make tourism an effective instrument of global progress.

Contact:

Prof. George Kibedi
Convenor
48 Eunice Road
North York
ONTARIO
Canada M2K 2V5

Telephone : (416) 225-0841

INTERNATIONAL CONFERENCE ON ENVIRONMENTAL LAW 14 - 18 June 1989
Sydney, Australia

Contact:

The Lawasia/Nela Conference Organiser
c/- J.G. Taberner
Freehill Hollingdale and Page
Solicitors
Level 30, MLC Centre
Martin Place
SYDNEY NSW 2000
Australia

Telephone : (02) 225.5427
Fax : (02) 233.6430

THE 9TH COMMONWEALTH CONFERENCE ON HUMAN ECOLOGY (CHEC), 19 - 23 July 1989
University of Edingburgh, Scotland

"Human Ecology, Sustainable Development and Education"

Contact:

Conference Secretariat
Centre for Human Ecology
15 Buccleuch Place
EDINBURGH EH8 9LN
United Kingdom

Telephone : 031-667-1011 Ext. 6696
Telex : 727442
Fax : 031-667-7938

THE SIXTH SYMPOSIUM ON COASTAL AND OCEAN MANAGEMENT, (COASTAL ZONE 89) 11 - 14 July 1989
Charleston, South Carolina, USA

Contact:

Delores Clark
Coastal Zone 89
P. O. Box 279
MIDDLETOWN. CA 95461
USA.

Telephone : (707) 987-0114
Fax : (707) 987-9351
Telex : (510) 600-7055

TROPICAL COASTAL AREA RESOURCES MANAGEMENT AND PLANNING WORKSHOP — 15 - 20 July 1989

Contact:

John Clark
School of Marine and Atmospheric Science
University of Miami
4600 Rickenbaker Causeway
MIAMI
FL. 33149
USA

OCEANS '89 - AN INTERNATIONAL CONFERENCE ADDRESSING METHODS FOR UNDERSTANDING THE GLOBAL OCEAN
Seattle, Washington, USA — 18 - 21 September 1989

Contact:

OCEANS '89
Applied Physics Laboratory
University of Washington HN-10
1013 NE 40th Street
SEATTLE. WA. 98105
USA.

Telephone : (206) 543-3445
Fax : (206) 543-4385
Telex : 4740096 UW UI

FIFTH INTERNATIONAL CONGRESS OF ECOLOGY
Yokahama City (Japan) — 23 - 30 August 1990

Contact:

A. Miyawaki
Institute of Environmental Science
and Technology
Yokahama National University
156 Tokiwadai
Hodogaya-Ku
YOKAHAMA 240
Japan

20TH WORLD CONFERENCE
OF THE INTERNATIONAL COUNCIL
FOR BIRD PRESERVATION (ICBP)
Hamilton, New Zealand

19 - 27 November 1990

Contact:

Dr. Mick Clout
Chairman
NZ Conference Organising Committee
DSIR
Private Bag
LOWER HUTT
New Zealand

Telephone : 64-4-694859

20TH INTERNATIONAL ORNITHOLOGICAL CONGRESS
Christchurch, New Zealand

2 - 9 December 1990

Contact:

Dr. Ben Bell
Zoology Department
Victoria University of Wellington
Private Bag
WELLINGTON
New Zealand

Telephone : 64-4-721000
Fax : 64-4-712070
Telex : NZ 30882 VUWLIB

PUBLICATIONS

SPREP - A full list of publications available through SPREP can be obtained from the SPREP Secretariat.

OTHER - Useful publications which have come to our notice but are not available from SPREP include:

- FAO Legislative Study No. 43, Pesticide Labelling Legislation, Luis Gonzales Vaque, 1988.

- Plants in Danger: What do we know? Stephen D. Davis, Stephen J.M. Droop, Patrick Gregerson, Louise Henson, Christine J. Leon, Jane Lamlein Villa-Lobos, Hugh Synge and Jane Zantovska, International Union for Conservation of Nature and Natural Resources, Gland, Switzerland, 1986. This comprehensive reference book provides, on a country-by-country basis, a guide to locating threatened plant information. Rather than outlining each individual threatened plant, which would take several volumes, this book shows you where to look for references to threatened plants in your country.

- Directory of Marine Training in Canada - 1988, International Centre for Ocean Development (ICOD), 1988. Available from:

  International Division
  International Centre for Ocean
  Development (ICOD)
  5670 Spring Garden Road, 9th Floor
  HALIFAX, Nova Scotia
  Canada B3J 1H6.

- Hazardous Waste in the Pacific Basin. Review prepared by the Pacific Basin Consortium for Hazardous Waste Research (PBCHWR), a group of research institutions located in countries of the Pacific. Report available from:

  Secretariat
  Pacific Basin Consortium for
  Hazardous Waste Research
  c/- East-West Center
  Environment and Policy Institute
  1777 East-West Road
  HONOLULU
  Hawaii 96848
  USA