

# ENVIRONMENT NEWSLETTER

Quarterly Newsletter of the South Pacific Regional Environment Programme

## Contents:

NUMBER 16

JANUARY - MARCH 1989

	Page
. News In and Around the Region	1
. Research Institutes in the South Pacific	14
. Courses in Environmental Subjects	15
. Calendar of Events	17
. Publications	21

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**



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.

Printed at  
Quality Print Limited, Suva, Fiji.

© Copyright South Pacific Commission, 1989.

The South Pacific Commission authorises the reproduction of this material, whole or in part, in any form, provided appropriate acknowledgement is given.

Original text: English

## NEWS IN AND AROUND THE REGION

### HAZARDOUS WASTE TRANSPORT AND DISPOSAL

Major concern worldwide over the transport and disposal of HAZARDOUS WASTE has led to negotiations for an international CONVENTION with strong provisions to limit and control these activities. The importance of this Convention cannot be stressed strongly enough as growing evidence emerges that large quantities of toxic wastes are being shipped from industrialised nations to developing countries.



*"Here we are, a tropical island paradise untouched by civilization,  
200 tonnes of toxic waste and not an environmental inspector for 800 kilometres."*

(Graphic Source: UNEP News, February 1989)

In response to a call from the Executive Director of the United Nations Environment Programme (UNEP) to governments to provide information of instances of "illegal traffic" in toxic and dangerous products and wastes that had taken place in their respective countries, many concrete examples of this practice have been unearthed, the predominant number being movement of hazardous wastes from 'developed' to 'developing' countries or, in some instances, to countries whose standards of environmental protection are more permissive.

Reports showed that 20 tons of wastes containing polychlorinated biphenyls had been dumped illicitly in Finnish territorial waters in the Baltic Sea. Fly ash containing high levels of dioxin, other toxic chemicals and heavy metal contamination had found its way to the African country of Guinea. Municipal solid wastes containing arsenic had been received in Hungary from Austria and subsequently endangered the wells of the nearby water supply system. Spent oil from the Federal Republic of Germany containing exceedingly high levels of polychlorinated biphenyls also has been utilised in industrial processes in Hungary. Thailand reported several instances of illegal imports of toxic chemicals from Singapore while Turkey reported that 'certain West European countries' exported to her territory industrial and domestic wastes as industrial fuel or for storage. Venezuela reported that it had returned 11,000 barrels of chemical wastes to Italy after a private company in Italy had exported them without the consent of the Government of Venezuela in an unsafe manner. The drums, which were shown to have high concentrations of heavy metals, leaked, were in constant danger of explosion and presented serious health hazards to the local population.

As well as direct country reports, UNEP also received information from non-government organisations which reported export of polychlorinated biphenyls and mercury-containing toxic wastes from the USA to Mexico as well as dumping of fly ash in Haiti.

These are only a few examples of the extensive practice of toxic and hazardous chemical wastes finding their way into countries from which they did not originate and underscores the importance of a **Global Convention on the Control of the Transboundary Movements of Hazardous Wastes** currently being negotiated under the aegis of UNEP. Other measures are also being taken. In May 1988, the Organisation of African Unity adopted a resolution calling for a continent-wide ban on the dumping of toxic wastes in Africa by industrialised states and in June leaders of the 16-member Economic Community of West African States (ECOWAS) agreed to enact national laws making it a criminal offense to facilitate dumping, and urged developed countries to tighten controls on exporters of hazardous wastes who are forced, by strict environmental legislation at home, to find dumping grounds abroad. Because of the awareness of the intractability of the toxic waste problem, industrialised countries have recently introduced tighter laws forcing polluting industries to treat their waste material as well as pay the extra costs involved in cleaning up these wastes. It is because of these developments that industries are trying to export to developing countries their "problem wastes" and yet the developing countries are even less well equipped than the developed ones, in dealing with toxic wastes.

**SOUTH PACIFIC** countries, too, have been the target for potential hazardous waste treatment and disposal sites with approaches having been made to several South Pacific island governments by a company from a 'developed' country offering simultaneous incineration of 'imported' hazardous waste with the generation of power in a stream boiler (cogeneration). Fortunately, governments in the region have rejected these proposals but the fear remains that approaches, couched in attractive terms, will be too tempting for some governments to reject. This article, and other information readily available by contacting SPREP, will hopefully serve to warn governments and administrations in the region of the potential dangers in accepting hazardous wastes generated by industrial development elsewhere in the world.

### SPREP POL MEETING

The maintenance of coastal marine environmental quality is vital to all countries in the South Pacific, this zone representing a major source of food, both directly and indirectly through its importance as a breeding ground. Thus, much of the inshore fisheries development which many governments have indicated as being of considerable importance, is dependent upon a clean coastal environment. In addition, the major or potentially major foreign exchange earner in many SPREP countries is tourism, requiring clean beaches, healthy reefs and clear waters to ensure its viability. **POLLUTION** of the coastal marine environment will thus have a major impact on at least two high priority development areas in the region making control of such pollution a major concern for governments.

The SPREP POL project has been designed to assist governments in such control. The assessment of the extent of pollution, the identification of the causes and pollutant sources and the development of appropriate control procedures, legislative or otherwise, are the main objectives of this project. It is hoped that the scientific and technical community will be able to work closely with regional administrations in assessing and tackling the problems and achieving solutions to them.

At the SPREP Intergovernmental Meeting in Noumea in mid-1988 Professor John Morrison of the University of the South Pacific (USP) was appointed Scientific Co-ordinator of SPREP POL, while the administrative co-ordination of the project is to be retained by SPREP.

A meeting of regional scientists was held in Sydney in January 1989 to develop a work programme for SPREP POL, identifying the following as priority marine pollution problems in the SPREP region:

1. Destruction of Coastal Ecosystem
2. Lowering of Water Quality
3. Changing Ocean Processes and Properties
4. Climate Change and Sea Level Rise

The meeting agreed that the first three problems be addressed in SPREP POL while the climate change and sea level rise issue is being considered in a separate SPREP/UNEP project.

The primary causes of the problems have been identified as:

- (i) Disposal of domestic waste (sewage and solid waste);
- (ii) Disposal/Management of non-domestic waste (e.g. solid waste, agricultural chemicals (both toxic and non-toxic), waste lubricating fluids, mine tailings);
- (iii) Increased sedimentation due to land use changes, uncontrolled logging, mining, and general construction activities;

S

P

R

E

P

P

O

L

- (iv) Coastal development activities including sand and gravel extraction, dredge and fill activities, port development, resort construction;
- (v) Over-exploitation of living marine resources, and
- (vi) Natural disasters including both episodic/local events such as cyclones and volcanic eruptions and cyclical/regional events such as the El Niño oscillation.

Secondary causes of the above problems include inadequate waste management programmes, inadequate legislation or inefficient enforcement/application of existing legislation and other mitigating action, and a lack of awareness in some countries of the seriousness of the problem.

The SPREP POL project will initially comprise a group of activities operating in 12 countries and addressing a number of the marine pollution issues raised above. The activities are grouped into three categories:

- (i) co-ordination of the project
- (ii) monitoring activities
- (iii) research and study projects.

Co-ordination of the project relates to the mechanisms established for funding the activities, insuring that work is carried out as planned, reporting results, preparation of reports and recommendations for governments as well as planning additional or future activities.

In order to ensure effective co-ordination the monitoring activities have been organised into sectors:

- (i) ocean processes and properties
- (ii) organochlorine pesticides
- (iii) heavy metals
- (iv) sewage-related pollutants

Each sector will have a co-ordinator who will report regularly to the Scientific Co-ordinator on work in his/her sector.

A large number of potential research topics have been identified but only a few of these will be initiated during the first phase of SPREP POL.

These include:

- (i) A study of land-based sources of pollution
- (ii) A review of sedimentation and its influence on coastal ecosystems
- (iii) Modelling of lagoon circulation
- (iv) Analysis of long-term data collected for coastal waters of Guam

The successful completion of the above activities will provide governments with the technical information needed in order to develop or upgrade legislative or other means ensuring marine pollution control and a strong base for ensuring efficient implementation of such control.



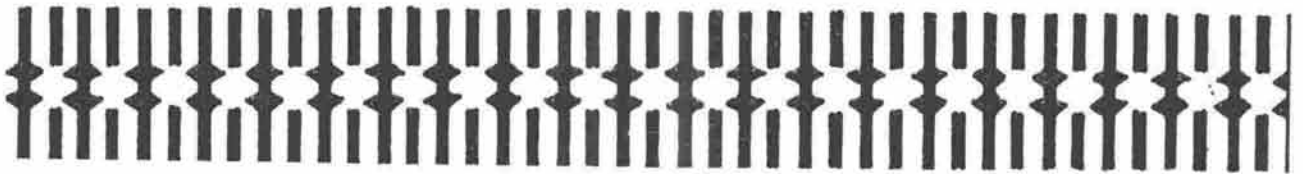
**KAKERORI (Rarotonga Flycatcher) Under Threat**



From Rarotonga, Cook Islands, comes the report of the *Kakerori* (Rarotonga Flycatcher), one of the world's rarest birds, fighting for survival. Now found only in Rarotonga in less than two square kilometres of rugged bushland, this small bird was once widespread over the island. In an attempt to save the *Kakerori* from extinction, a project funded jointly by the Department of Scientific and Industrial Research (DSIR) in New Zealand and SPREP is currently underway through the Cook Islands' Conservation Service.

Along with a recovery programme, the Conservation Service is looking to establish a *Kakerori* Nature Reserve.

(Source: Pacific Islands Monthly: March 1989).



<b>P</b>	<b>ROTECTED</b>
<b>A</b>	<b>REAS</b>
<b>D</b>	<b>ATA</b>
<b>U</b>	<b>NIT</b>

Originally established in 1981 as part of the IUCN Conservation Monitoring Centre, PADU now forms an integral part of the **World Conservation Monitoring Centre**, jointly managed by IUCN, WWF and UNEP.

#### What is PADU?

There has been wide discussion of the value of protected areas and the contribution they make to conservation of the world's natural and physical resources. Such values range from retention of representative samples of natural regions and the preservation of biological diversity, to the maintenance of environmental stability of surrounding regions. Protected areas also provide the opportunity for complementary rural development and rational use of marginal lands, and for research and monitoring, conservation education, and recreation and tourism. As a result many countries have extensive systems of protected areas. However, these systems vary considerably from one country to another, depending on individual needs and priorities, and on differences in legislative, institutional and financial support. At the same time different areas can best meet different types of needs, and some protected area values are not compatible with others. This has led to the development of a wide range of protected area types and definitions.

Many individuals and organisations need basic information on the protected areas systems of countries, lists of protected areas with certain features, or analyses of protected area statistics, yet it is unlikely they will have the time or resources to obtain and make sense of all the information themselves. Also such information needs to be kept up to date, as sites are added or extended, as legislation changes, or as administrative and management regimes change. Other users need basic details on the major protected areas within the systems, details such as major physical features, fauna or vegetation. Perhaps more importantly, they may also want objective information on other factors such as management activity and effectiveness, and on management problems and the degree of threat.

It is to service these needs that the **PROTECTED AREAS DATA UNIT** was set up.

#### Objectives

The general objective of the work of the unit is to provide accurate up-to-date information on the protected area systems of the world. The information is of value to the IUCN, WWF and UNEP in the development of their programmes and projects, and to the various members and partners of these organisations, and is also available for use by other organisations and agencies.



Specific objectives are to:

- keep under review the lists of the world's protected areas, and to maintain a database on such sites;
- build up current and historical literature on protected areas;
- prepare and update definitive, standard format, information documents summarising the protected areas systems of individual countries;
- prepare and update definitive, standard format, information documents on the major protected areas; and
- provide support to international activities, programmes and conventions relating to protected areas issues.

Information is gathered through published and unpublished literature, and through correspondence with a global network of contacts, ranging in professions from policy-makers and administrators to land managers and scientists and falls into four categories

- up-to-date lists of protected areas;
- details of national protected areas systems;
- details of individual protected areas; and
- maps of national protected areas systems and individual sites.

Realising the importance of information quality, PADU has in recent years tried to provide a more comprehensive and accurate coverage, and has developed a systematic approach to improvement of the information it has available. This approach begins with a review of the existing information documents on a country by country basis, with the compilation of new ones as necessary. This is based on available information and literature searches. Draft 'directories' for each country are then circulated for review by relevant government authorities, and experts at national and international levels. The drafts sent out provide a good basis on which to improve the level of existing information, as the draft is checked by individuals familiar with the protected areas, who can check for misinterpretation and assess what information is lacking. This kind of approach yields a good return of information.

Further Information about PADU can be obtained by contacting:

Jeremy Harrison  
Protected Areas Data Unit  
World Conservation Monitoring Centre  
219 C Huntingdon Road  
CAMBRIDGE CB3 0DL  
United Kingdom

Telephone: (0)223 277314  
Telex: 817036 SCUM G  
Telefax: (0)223 277136

## SPREP HOLDS INAUGURAL

### STEERING COMMITTEE MEETING

Following a recommendation from the Second Intergovernmental Meeting on the SPREP Action Plan and subsequent approval by the 28th South Pacific Conference, a Steering Committee was established to replace and take over the functions of the former SPREP Coordinating Group. This action was taken to ensure closer involvement in the activities of SPREP by its member governments. Whilst the former Co-ordinating Group was only made up of four representatives, one each from the Forum Secretariat, the South Pacific Commission, the United Nations Environment Programme and the Economic and Social Commission for Asia and the Pacific, the new Steering Committee contains representatives from member governments with the former Co-ordinating Group members present in an advisory role.

This small committee with one representative from each of the sub-groupings of Melanesia, Micronesia, Polynesia, Australia/New Zealand, and France/U.K./U.S.A meets twice yearly to give 'guidance and direction' to the SPREP Secretariat. In between meetings, it was agreed that the members of the Steering Committee undertake an 'ambassadorial' role in promoting SPREP whilst in the course of their normal travel. As part of this 'promotion' activity, Steering Committee members were requested to encourage firm member government financial support to SPREP by reminding member governments and administrations of their commitment towards achieving the goals of the SPREP Action Plan. It was stressed that the Steering Committee role be that of a Committee responsible for the oversight of the implementation of the SPREP Work Programme approved by the Intergovernmental Meeting held every two years.



In effect it gives guidance and direction to SPREP in between Intergovernmental Meetings. Sub-group representation will operate on an alphabetical country rotation basis although it is possible for a country, in consultation with other members in the sub-group, to renounce its turn in favour of another country. It was firmly established that at Steering Committee Meetings the representative of each sub-group participates on behalf of all countries and territories in his/her sub-group. The role of 'observers' and 'advisers' relative to that of 'sub-regional representatives' was clearly defined. In order to benefit from the experience and expertise of advisers and observers it was agreed that they can be called upon, by the Chairperson to contribute to discussion but it was decided that to automatically open up the meeting to all present would negate the principle of having sub-regional representation. The opportunity exists also for 'observers' to channel their views through their sub-regional representatives.

In the interests of continuity this first Steering Committee Meeting was chaired by the upcoming Chairperson of the 1990 Intergovernmental Meeting, the representative of the Micronesia sub-group, Dr. Eliuel Pretrick with the representative of the Australia/New Zealand sub-group, Mr. John Gilbert, as Vice-Chairperson.

The next (second) Steering Committee Meeting will be held in Port Vila in September 1989 to coincide with the Fourth South Pacific Conference on Nature Conservation and Protected Areas. The full terms of reference for future Steering Committee Meetings appear as an annex to the report of the first Steering Committee Meeting which is available from the SPREP Secretariat.

By establishing this Steering Committee, it is hoped to give member governments a greater opportunity for input into the implementation of the Work Programme, rather than only having this opportunity at the two-yearly Intergovernmental Meetings. SPREP welcomes this innovative approach to ensuring greater guidance and direction from the member countries on whose behalf it undertakes a wide range of environmental protection activities.

### SPREP'S PHOTOGRAPHIC EXHIBITION

Valuable opportunities to educate people within the region about the benefits of environmental protection, are being presented dramatically through SPREP's Environmental Photographic Exhibition. Produced for SPREP by Dr Paddy Ryan of the University of the South Pacific with financial assistance from the United Nations Environment Programme (UNEP), this professionally photographed series of contrasting positive and negative aspects of the South Pacific environment, is proving a very effective environmental education tool. A pristine waterfall is effectively contrasted with a polluted water source, an untouched beach compares most favourably with another on which rubbish has been dumped; and a clear sky above natural vegetation highlights the relative damage shown in another which depicts air pollution from a factory. These are only a few of the series in which there are already 12 photographs and when finalised will contain 20. With few words, an environmental protection message is being effectively transmitted around the region. One set of these photographs is currently on permanent exhibition at the SPC headquarters in Noumea where it is able to be viewed by the many regional visitors to SPC meetings. When completed, the second set will form a 'Travelling exhibition' in countries around the region.

**SPREP AND AUSTRALIAN VOLUNTEERS ABROAD (AVA) ASSIST  
SOLOMON ISLANDS**

Tanya Leary, an Australian honours graduate in Natural Resources (Parks and Wildlife Management) has recently taken up a position as Wildlife Management Officer/Ecologist attached to the Ministry of Natural Resources in the Solomon Islands. This appointment, made possible through a co-operative undertaking by the Australian Volunteers Abroad (AVA) and SPREP, will assist the government of the Solomon Islands in an important activity previously requested by them for incorporation in SPREP's Work Programme.

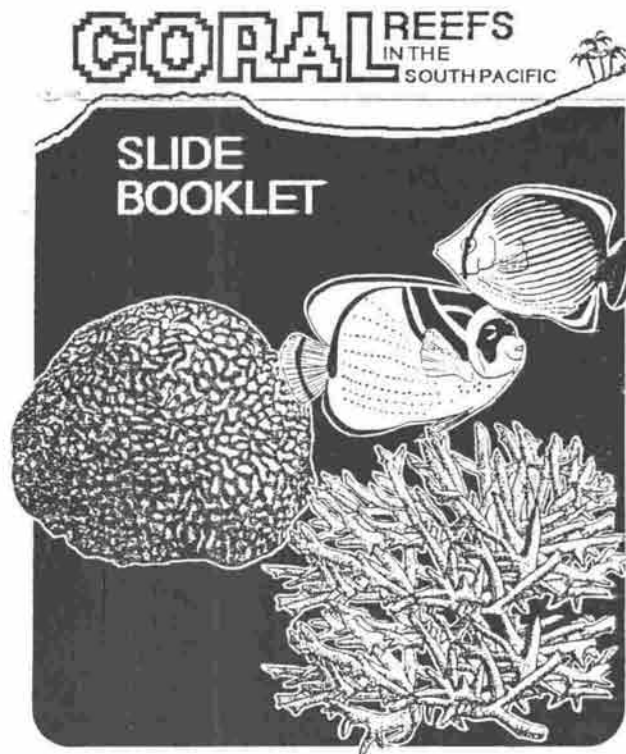
Hailing from Sydney, Tanya has had extensive experience in wildlife research and management through her past employment with the NSW National Parks and Wildlife Service and with non-government organisations. She has undertaken assessments of the adequacy of national parks and nature reserves to conserve representatives of all native animals in an area, surveys of areas to assess the distribution and status of the native fauna, studies on the impact of logging operations and land-use changes on native animals, and general ecological studies on animals ranging from bats to lizards. This experience prepares her well for her 1-year term of appointment in the Solomon Islands.



**BRITISH GOVERNMENT  
SUPPORTS SPREP'S ENVIRONMENTAL  
EDUCATION ACTIVITIES**

Financial assistance from the British Government has enabled the production of a **CORAL REEF SLIDE SET** an important component of SPREP's new UNEP-supported **CORAL REEF PROTECTION KIT** and readily available through SPREP. Developed particularly for use by teachers, this material incorporates extra coral reef information for easy use by teachers in the classroom. Produced for SPREP by Marine Biologist, Dr. Michael King, this slide set and graphically-illustrated booklet gives one a ready appreciation of **CORAL REEF** ecology and in a well-written and easy-to-understand style, tells us much about corals - how they grow - types of corals - why they are important.

This is part of the British Government's efforts to "help the islands tackle their many environmental problems. If solutions are to be found, they will require the use of management skills and good scientific understanding of the various island environments", stated Mr. Chris Patten, Minister for Overseas Development when he addressed an international conference on the Pacific Environment at the Commonwealth Institute in London last year.



Produced by Dr Michael King for the  
SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME (SPREP)  
SOUTH PACIFIC COMMISSION  
Noumea, New Caledonia

with financial assistance from the Government of the United Kingdom

**CANADIANS, TOO, SUPPORT SPREP**

The Halifax-based **INTERNATIONAL CENTRE FOR OCEAN DEVELOPMENT (ICOD)** financially assisted SPREP in the production of its **COASTAL ZONE PROTECTION KIT**. The various components poster, booklet, fact sheet, leaflet, sticker - prepared for SPREP by Dr. Michael King and Captain Alf Carver of the Australian Maritime College, again are written in an easy-to-understand style and provide another batch of very effective, specific South Pacific environmental education material of value to the region's teachers and the wider community. Contact SPREP for sets of these kits.



# COASTAL COLOURING SHEET

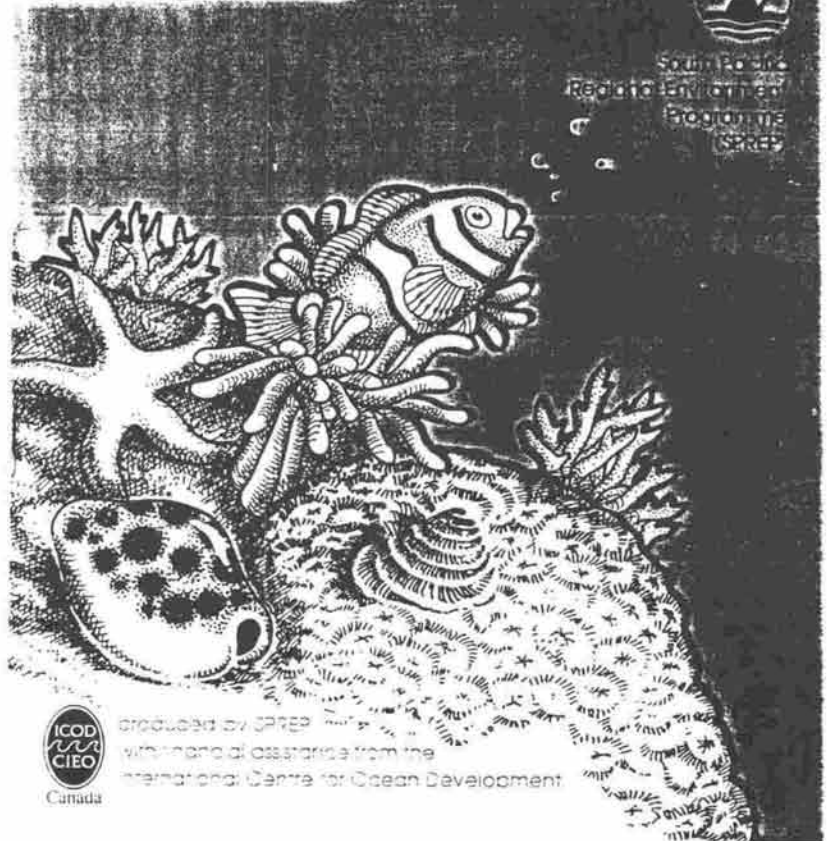


South Pacific Regional Environment Programme (SPREP)  
 South Pacific Commission (SPC)  
 PO Box 11, Suva, Fiji

ICOD  
 CIEO  
 Produced with financial assistance from the International Centre for Ocean Development (ICOD)



Canada



Produced by SPREP  
 with financial assistance from the  
 International Centre for Ocean Development

South Pacific  
 Regional Environment  
 Programme  
 (SPREP)



**UNEP'S SUPPORT FURTHER STRENGTHENS  
ENVIRONMENTAL EDUCATION**

Always a strong supporter of SPREP, the United Nations Environment Programme (UNEP), provided financial assistance to enable the production of a CORAL REEF PROTECTION KIT now nearing completion. This Kit containing a Booklet, the British Government-assisted Slide/Tape set, Student Exercise Sheets, Poster, Colouring Sheet providing valuable information on that most precious resource of the South Pacific - the Coral Reef. School children in the region will benefit greatly from the availability of this material.

STICKERS



FACT SHEETS

POSTERS

BOOKLETS



Produced by Dr Michael King for the  
SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME (SPREP)  
SOUTH PACIFIC COMMISSION  
Noumea, New Caledonia  
Illustrations by S. Belew and M. King



Produced with financial assistance from the  
UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP), Nairobi, Kenya

**IN 1989 SPREP IS BUSILY CONSOLIDATING  
ENVIRONMENTAL EDUCATION MATERIAL - AVAILABLE BY  
WRITING TO SPREP.**

## RESEARCH INSTITUTES IN THE SOUTH PACIFIC

WERI - is the acronym for the Water and Energy Research Institute of the Western Pacific which is based at the University of Guam. One of WERI's areas of work is **WATER QUALITY ANALYSIS**, involving projects on chemical and biological aspects of water quality undertaken by its Water Lab.



**WERI**  
**WATER AND ENERGY**  
**RESEARCH INSTITUTE**

UOG Station, Mangilao, Guam 96923  
 USA

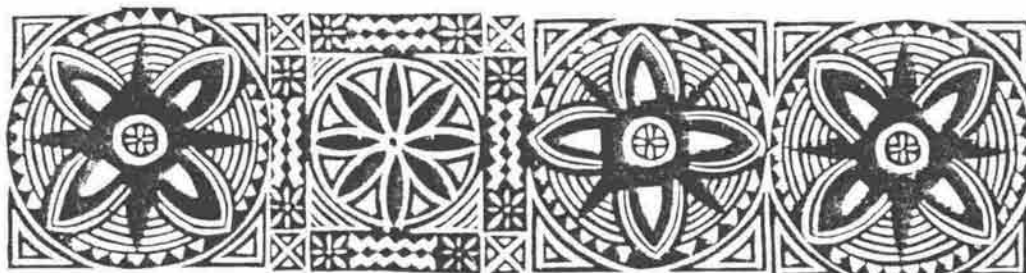
The importance of having a local water quality analysis laboratory capable of quickly responding to environmental pollution problems has been illustrated time and time again. For instance, its rapid response capabilities have recently proven most effective in taking action over a potential emergency situation involving spills of the chemical PCB.

WERI through its Water Lab, serves the water research needs of Guam and the Western Pacific and its staff is available to assist in answering questions and concerns about water resources.

(Source: WERI News, Fall 1988)

Contact:

Dr Leroy F. Heitz  
 Director  
 Water and Energy Research Institute  
 of the Western Pacific  
 University of Guam  
 UOG Station  
 MANGILAO  
 Guam 96923  
 USA



## **COURSES IN ENVIRONMENTAL SUBJECTS**

### **INTERNATIONAL FOREST RESOURCE MANAGEMENT**

**College of Forestry and Natural Resources  
Department of Forest and Wood Sciences  
Colorado State University**

The programme in International Forest Resource Management (IFRM) is designed to provide graduate education to students from all countries and backgrounds in basic and applied aspects of dry woodland and semi-tropical forest resource management. The programme focuses on appropriate and integrated methods for forestation, forest management, and forest products utilisation. Factors unique to dryland and tropical forests are addressed in the contexts of long-term sustainability of resources and economic development via product utilisation.

The International School of Forestry and Natural Resources at Colorado State University offers a non-degree programme of study to allow students opportunities for short-term training or professional updating. It is also possible, however, for students in the International School to apply for transfer into a degree programme.

For further information contact:

A.A. Dyer  
Co-ordinator  
International Forest Resource Management  
Department of Forest and Wood Sciences  
Colorado State University  
Fort Collins  
COLORADO 80523  
United States of America

Telephone: (303) 491-6911  
Fax: (303) 491-7904

**SECOND CERTIFICATE COURSE IN COMMUNITY FORESTRY**  
**12 June - 8 December 1989**

This course explains the role of forestry in daily community life. Students develop skills in solving community forestry problems. It covers environmental principles, human and economic behaviour, people and natural resource interactions, planning, management and application. For individuals with a first degree or equivalent experience in forestry, agriculture, environmental sciences, biology, geography and social sciences. Instruction is in English. Fee of \$ 9,200 includes subsistence allowance, in-country transportation, documents and supplies, health insurance and fees. For information and admission,

Contact:

Dr Somsak Sukwong  
 Director  
 Regional Forestry Community Training Center  
 c/- Kasetsart University  
 BANGKOK 10900  
 Thailand

Telephone: 579-0108  
 Telex: 21957 RECOFTC TH

**AGROFORESTRY: AN INTENSIVE COURSE IN SUSTAINABLE LAND USE**  
**FOR THE HUMID TROPICS**  
 Costa Rica  
 12-30 June 1989

For university staff and advanced students, as well as professionals working in agriculture and forestry improvement programmes wishing to become better acquainted with the basics of agroforestry as well as latest techniques. Proficiency in English is essential. The course fee of US\$ 1,900 includes tuition, teaching materials, lodging in double occupancy rooms, hospital insurance, field trips and transport to and from the San Jose Airport. For information and application, write to the:

Universidad para la paz  
 P.O. Box 199  
 1250 Escazu  
 SAN JOSE  
 Costa Rica

## CALENDAR OF EVENTS

**ECOLOGY 89: FROM PROBLEMS TO STRATEGIES. 28 - 31 August 1989**  
**INTERNATIONAL CONGRESS AND EXHIBITION**  
**Gothenburg, Sweden**

Contact:

The Swedish Exhibition Centre  
 Ecology 89  
 P.O. Box 5222  
 S-402 24 GOTHENBURG  
 Sweden

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

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

**ECOPOLITICS IV**  
**Adelaide, Australia**

21 - 24 September 1989

Contact:

Graduate Centre for Environmental Studies  
 University of Adelaide  
 G.P.O. Box 498  
 ADELAIDE SA 5001  
 Australia

Telephone : (08) 228 5835  
 Fax : (08) 224 0464

**SIXTH INTERNATIONAL SEMINAR ON** 17 September - 11 October 1989  
**FOREST ADMINISTRATION AND MANAGEMENT,**  
**The University of Michigan, USA**

Contact:

Director  
 International Forestry Seminar  
 School of Natural Resources  
 University of Michigan  
 ANN ARBOR MI 48109-1115  
 United States of America

Telephone : 313/747-4337  
 Telex : 4320815 UOFM/UI

**INTERNATIONAL SYMPOSIUM ON**  
**OPERATIONAL FISHERIES OCEANOGRAPHY,**  
**St John's, Newfoundland, Canada**

23 - 27 October 1989

Mr M.C. Mercer  
 Department of Fisheries and Oceans  
 P.O. Box 5667  
 ST JOHN'S  
 Newfoundland  
 Canada A1C 5X1

Telephone : 709-772-2027  
 Fax : 709-772-4347  
 Telex : 016-4698



**GLOBE '90**  
**Vancouver, Canada**

19 - 23 March 1990

Contact:

Globe 90  
 Suite 250, 1130 West Pender St.  
 VANCOUVER, B.C.  
 Canada V6E 4A4

Telephone : (604) 681-6126  
 Telex : 04-51586  
 Fax : (604) 681-6825

**MARINE COASTAL EUTROPHICATION:**  
**The Response of Marine Traditional**  
**Systems to Human Impact; Problems and**  
**Perspectives for Restoration,**  
**Bologna, Italy**

21 - 24 March 1990

Contact:

Regione Emilia-Romagna  
 Assessorato Ambiente e  
 Difesa del Suolo  
 Via dei Mille, 21  
 40121 BOLOGNA  
 Italy

**FIFTH INTERNATIONAL CONGRESS OF ECOLOGY**  
**Yokohama City (Japan)**

23 - 30 August 1990

Contact:

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

**ECOLOGY OF MANGROVES &  
RELATED ECOSYSTEMS**  
University of Nairobi, Kenya

24 - 30 September 1990

Multidisciplinary meeting to compare current research and to review status of present day knowledge on biological, chemical and physical aspects of mangrove and related ecosystems and their exploitation.

## Contact:

Dr. E. Marteno  
Department of Zoology  
University of Nairobi  
P.O. Box 30197  
Nairobi  
Kenya

Telephone : (254) (2) 43181  
Telex : 22095 Kenya

**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

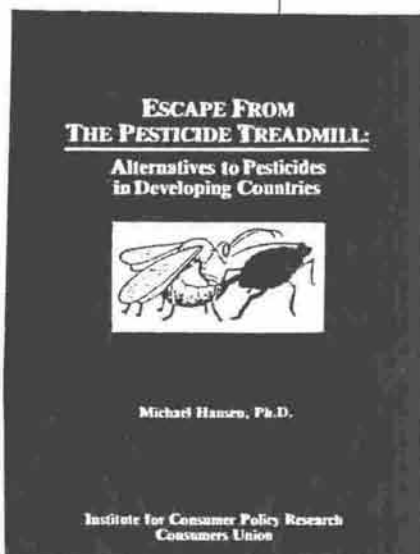
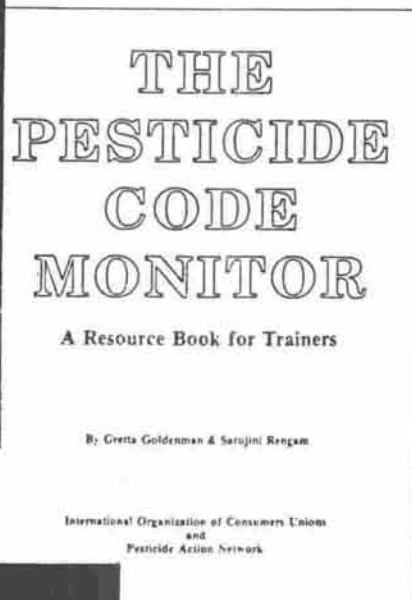
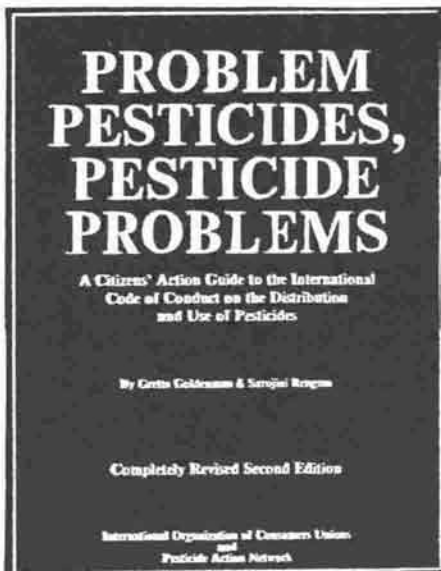
Telephone : 64-4-721000  
Fax : 64-4-712070  
Telex : NZ 30882 VUWLIB

## PUBLICATIONS

- **GIANT CLAMS IN ASIA AND THE PACIFIC** - Edited by J.W. Copland and J.S. Lucas. Published by Australian Centre for International Agricultural Research, 1988. (ACIAR) Available from: INKATA PRESS PTY. LTD., 4 Longbourne Avenue, NORTH CLAYTON, Victoria 3168, Australia.

This publication brings together the literature and results of most of the world's research on giant clams, most of which was presented at a workshop held at James Cook University in April 1988.

- **PESTICIDES** - Three very useful publications relating to Pesticides have recently come to our notice:



International Organization of Consumers Unions (IOCU)  
 Regional Office for Asia and the Pacific  
 P.O. Box 1045, 10830 Penang, Malaysia.  
 Tel: 60-4 20391/371396 Telex: MA 40164 APIOCU  
 Fax: 60-4 366506 Cable: INTEROCU