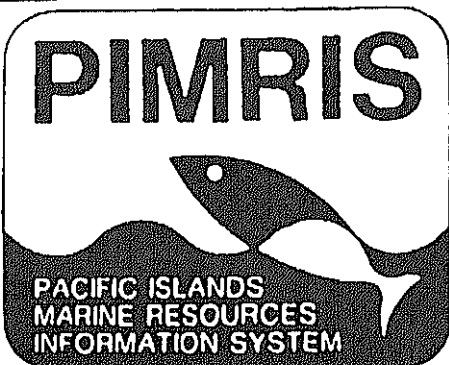


PIMRIS NEWSLETTER



Pacific Islands Marine Resources Information System
C/- Marine Studies Programme, The University of the South Pacific,
P O Box 1168, Suva, Fiji

Ph: (679) 321 2284 Fax: (679) 330 1490 Email: pimris@usp.ac.fj

FROM THE PIMRIS DESK.....

The year 2001 went successfully with increasing number users seeking assistance at PIMRIS Coordination Unit. An increase of 126% was experienced primarily due to the relatively more stable political situation compared to the previous year. One of the significant activities included the PIMRIS Steering Committee Meeting held in Suva, Fiji from 10 - 11 July 2001. The objective of the meeting was to bring together librarians, information specialists, and interested people from the regional organisations and Pacific Island countries who are involved in the PIMRIS network, to report on the status of their work, outreach programmes, information dissemination among the national centres and other aspects of information networking. The PIMRIS Coordinator also conducted a workshop on Introduction to WINISIS database software in conjunction with the Meeting. The aspects covered are provided in detail in this issue.

Identifying and collecting marine resources documents produced in the region is an ongoing task for PIMRIS and marine resource workers are encouraged to deposit their reports at USP Library.

All regional partners continue exploring and usage of modern technological means of communication such as Internet (e-mail, telnet) facilities for information sharing. They continue to develop links with other libraries, information centers and information networks, exploring possible international connections.

This issue of the Newsletter also provide a number of publications and online information resources for the benefit of the readers.

Ganeshan Rao
PIMRIS Coordinator

REQUEST

This is a request to you to deposit copies of any of your publications (published or unpublished - reports, research papers, technical papers, etc.) with PIMRIS. The annual reports are especially important. The items will be added to the Pacific Collection of USP Library.

PIMRIS has been continuously soliciting for documents (published or unpublished) on Marine Resources (living as well as non-living), specific to the Pacific Island countries. This is essential in order to create a centralised location in the Region where most of the marine related documents could be found.

PIMRIS is a joint project of the South Pacific Applied Geoscience Commission(SOPAC), the Forum Fisheries Agency(FFA), South Pacific Commission(SPC) and The University of the South Pacific(USP) funded by Canadian International Development Agency. The SPC component is funded by the Government of France. South Pacific Regional Environment Programme(SPREP) is also another cooperating institution.

Contact persons at the Regional Organisations Cooperating in the PIMRIS Network

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PIMRIS Newsletter is published quarterly March, June, September, December.

ISSN : 1015 - 3217

(Views expressed in the articles are not necessarily those of the institutions cooperating in the PIMRIS Network)

PIMRIS Coordination Unit

Staffing

For 2001 the Coordinator, Ganeshan Rao, also served as Head of Reader Services at the USP Main Library. Doreen Kalpana Naidu served as part-time Junior Library Assistant for Semester 1 and was replaced by Subhashni Lal during Semester 2.

Regular Products and Services

PIMRIS Newsletter issues 1; a monthly current contents awareness service for 158 periodical titles of which 138 are held at USP and 20 at SOPAC; and bibliographies.

Information Requests

The number of requests increased significantly during the year primarily due to an increased use by USP students and staff. The requests included both quick reference and research type reference questions as well as literature searches.

	2001	2001
<i>Type of User</i>		%
Fisheries Officers	56	0.3
Researchers	35	0.2
USP Staff	292	1.5
USP Students	17695	93.6
Govt. Officers	9	0.1
Schools	801	4.2
Librarians	17	0.1
Others (busi, etc.)	-	-
TOTAL	18905	(126% increase)

	2001	2001
Pacific Is Region	18899	99.9%
Outside Region	6	0.1%

Library Instructions

Library tutorials were conducted for science students of the University on the usage of scientific indexes and abstracts. These included: *Biological Abstracts*, *Aquatic Sciences & Fisheries Abstracts (ASFA)* via Internet and CD-ROM versions, and *Chemical Abstracts*. Instructional sessions were also conducted on the use of reference publications, web-searching, and research skills. The tutorials were organised in liaison with lecturers and the Reader Services of the USP Library. A specific display was done in PIMRIS to educate users on mutilation.

Major Activities

- **10th PIMRIS Steering Committee Meeting**

It was held on 10-11 July 2001 at Marine Studies Facility, USP, Suva. The meeting noted that over the past decade a lot of effort had been put into improving the regional arrangements to strengthen PIMRIS. The attendees came

from SOPAC, SPC, USP, FAO, Fiji, Samoa, Tonga, Vanuatu, Solomon Islands, American Samoa and Tuvalu. The Meeting discussed various issues pertaining to marine information needs, services, products and access. The meeting produced a number of recommendations and agreements to fulfil the expressed and perceived needs of the region in marine resources information. A report from this meeting was also presented to the 2nd SPC Heads of Fisheries Meeting on 23rd July in Noumea to bring issues to their attention.

The following issues of concern were highlighted from the reports submitted by the delegates:

- inadequate staffing situation in libraries;
- need for library assistance;
- library staff expected to carry out other additional duties, hence having adverse effect on library duties;
- inadequate library system;
- database corruption;
- limited library budget;
- need for assistance with equipment to support library work.

Recommendations to address country concerns:

- Efforts be made to sustain and improve communication between PIMRIS and member countries or points of contact;
- PIMRIS attempt to assist member countries with equipment and other library needs and to follow up with system maintenance and update;
- Countries attempt to get funding incorporated within any project proposals for information services/publications;
- PIMRIS members use Ariel for ILL and the small libraries that do not have funds to get a full Ariel send and receive system could use DocView or Imaging or any image reading software to receive documents.

- **Workshop on Information Skills**

It was conducted on 12-13 July 2001 following the PIMRIS Meeting. It covered: Internet searching, ASFA online, basic skills in fisheries library operations, and basic skills in WIN ISIS database software. Participants from Fiji, New Caledonia, Samoa, Tonga, Vanuatu, Solomon Islands, American Samoa and Tuvalu attended the workshop.

The following aspects were covered during in the workshop:

- Basic skills in Internet searching using Netscape;
- Searching for marine/fisheries information using Internet;
- Searching on ASFA online i.e. Cambridge Scientific Abstracts Internet Database Service;
- Searching ASFA on CDROM using WinSpis;
- Sources of information, referral services, and assistance available with PIMRIS;
- Basic skills in marine/fisheries library operations;
- Use of the fisheries library manual developed by PIMRIS covering collection development, organization, weeding, processing, shelving, etc.;

- Reviewing practices and issues of countries;
 - Basic skills in WINISIS database software;
 - Database structure, searching, data entry, backup, export/import
- PIMRIS continued its regular activities: running the Resource Centre/Library and Audio-Visual Collection; Publishing Work for PIMRIS & MSP; and providing a regional information service in co-operation with other member libraries.
 - **Institute of Research & Development (IRD ex-ORSTOM) Noumea New Caledonia:** An understanding was reached with IRD for document and information exchange and current awareness service using their periodicals collection.
 - **Collection Development.**
A sum of \$10,000.00 was committed by the Library towards purchase of marine related publication in order to strengthen the collection. During 2001 a total of 426 items were collected for the PIMRIS collection: i.e. 65 new books; 23 second copies; 338 reprints copies awaiting cataloguing.
 - **Assistance to Countries.**
PNG: A set of disks with library database structure files, software (with instructions), and 2199 PNG records were sent to National Fisheries Authority for their library.
Vanuatu – Fisheries Division Library (30July – 2 August). The purpose of the visit was to provide technical assistance in developing a library database (using WINISIS software); set up the fisheries library; and provide basic marine information management skills.
 - **SOPAC Providing Technical Assistance:**
In August 2001, SOPAC Librarian provided a one-week training to Library Officer of the Department of Geology, Mines and Water Resources, Port Vila, Vanuatu on basic library management skills, followed by a field trip to Vanuatu Department of Geology, Mines and Water Resources to organize their library collection.
 - **Inter-Library Loans.**
Requests were mainly received from post-graduate students. These were fulfilled mostly through PIMRIS bilateral links with overseas institutions.

DONATION OF BOOKS TO PIMRIS LIBRARY



*Dr Kenneth Mackay (Canadian-South Pacific Ocean Development Programme C-SPODP) representative (left) donating his personal collection of marine publications to Ganeshan Rao (PIMRIS Coordinator) (second from right) witnessed by other staff.
Thank you, Dr Mackay.*

THE NATURE CONSERVANCY'S (TNC) ASIA/PACIFIC COASTAL/MARINE PROGRAM

The focus is to develop and refine its live reef fish trade strategy to help minimize the trade's destructive impact on marine biodiversity in Indonesia and the Pacific. Recognizing the unsustainable nature of the live reef fish trade and its immense threats to marine biodiversity, the Conservancy is working to catalyze a trend that will convert the trade's dependence on wild caught groupers to the use of groupers raised in hatcheries. The Conservancy believes that this market transformation can be achieved through the mariculture of target species in the supply (or exporting) countries such as Indonesia and in mainland China. Sustainable mariculture will help abate the damaging effects of destructive fishing methods on coral reefs, while relieving fishing pressure on the breeding populations of targeted species.

Contact Information:

Coastal Marine Program
Asia Pacific Region
The Nature Conservancy
923 Nuuanu Avenue
Honolulu, HI 96817
Fax: 808-545-2019

*Source: S Walker, Coastal Marine Program, Asia Pacific Region. The Nature Conservancy.
Jan 2001.*



Secretariat of the Pacific Community

TROCHUS

Number 8 - November 2001

INFORMATION BULLETIN

Editor: Dr Chan L. Lee, Fisheries WA, PO Box 71, Broome 6725 WA, Australia. [Phone: 61 8 91936302; fax: 61 8 9191 5470; e-mail: cleve@fish.wa.gov.au]. Production Information Section, Marine Resources Division, SPC, P.O. Box 5084, Noumea Cedex, New Caledonia. [Fax: 687 263018; e-mail: cplnfo@spc.int] Printed with financial assistance from France and Australia.



Editorial

It was wonderful to visit Noumea, New Caledonia again. I wish to express my sincere thanks to Barney Smith, ACIAR, and Dr Tim Adams, SPC, for inviting me to the SPC-ACIAR Aquaculture Workshop (Friday 20-Saturday 21 July 2001) followed by the 2nd SPC Heads of Fisheries meeting (23-27 July 2001).

The visit to Noumea was a wonderful opportunity to establish contact and meet many people from the Pacific nations and elsewhere that I had heard of, interacted with by mail or email, and finally putting a face to many of the names. To all my new 'mates' may I say, 'keep in touch' with news and articles on trochus and related molluscs/aquaculture/fisheries activities from your countries.

While in Noumea, Aymeric Desurmont and Jean-Paul Gaudichou (SPC Fisheries Information Specialist and Adviser) and myself took the opportunity to hold an *ad hoc* meeting to discuss the future of the *SPC Trochus Bulletin* and determine methods of improving the services of the bulletin to our readers. We shared the view that a single species bulletin has limited potential. In addition, the current level of research and news on trochus in the Indo-Pacific region is making it difficult to have regular issues. Some readers may have noticed that the time taken to produce *Trochus Bulletin* 5 and 6 was over two years and the latest bulletin, No 7, was printed some 12 months after No 6. Strife in this issue of the bulletin, No 8, has taken about 10 months although I hope to be able to get the next one out as early as July 2002.

To keep readers interested, I believe it would be good to have at least 2-3 issues published every year. For this to happen, I

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S. Chhababandi et al. p. 15

An improved method of packing to minimize mortality in juvenile trochus during transport
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Aquacultured giant clams, *Tridacna gigas* and *Hippopus hippopus*, used as the main biofilter in a saltwater aquarium recirculation system
R.D. Bodey p. 24

and more...



Snapshots of the trochus button factory in Port Vila, Vanuatu

Chan L. Lee and Moses Amos

During a visit to Port Vila from 23 to 25 May 2001 to attend the ACIAR trochus end of project meeting, Moses Amos was kind enough to organise a visit to the largest trochus button factory on the island of Efate.

We hope the snapshots provided in this brief article will give a good insight on the trochus fishery in Vanuatu and the operations of its largest button factory in Port Vila.

Trochus fishery in Vanuatu

Trochus shell is a valuable commodity to the artisanal fishermen in Vanuatu. Data provided by the Department of Fisheries (Fisheries Division Annual Report 1998 and 1999) indicated that

export of raw and processed shells fluctuated between about 25 t and 84 t in the last decade (Table 1).

The export value of the trochus shells was about USD 482,000 (VUV 77.1 million using a conversion of USD 1.00 = VUV 160) and USD 697,000 in 1998 and 1999, respectively. Since the export value for 1999 is about 45% higher than 1998 and yet the harvest is about half that of 1998, it could be assumed that most of the 1999 shells were sold as higher priced processed button blanks to overseas countries. This move to export semi-processed shells is highly desirable and is a good outcome for Vanuatu. By adding value to the raw shells, it creates additional employment and stimulates other economic activities in Port Vila.

Snapshots of the button factory in Port Vila

Port Vila has two factories producing button blanks. The larger factory produced >22 t of raw button blanks in 1999 with an export value of >USD 500,000. The processes involved in many button blanks are relatively simple and fairly labour intensive, and involves the following steps:

- grading the raw shells,
- producing blanks from the shells,
- automatic grading of blanks,
- semi-polishing of blanks,
- sizing of semi-polished blanks, and
- exporting.

The shell wastes resulting from the blanking operation also has a market value and are normally collected and packed in bags and exported. Figures 1 to 9 provide a snapshot of the production process of making raw button blanks for export.

Table 1. Trochus shell export (raw and processed) from Vanuatu, 1990-1999.

Year	Quantity (kg)
1990	51,000
1991	67,009
1992	19,539
1993	61,296
1994	25,400
1995	56,091
1996	84,317
1997	78,229
1998	57,049
1999	27,900

Source: Fisheries Division Annual Report, Port Vila, Vanuatu

1. Department of Fisheries, PO Box 71, Broome WA 6725, Australia. E-mail: cleve@fish.wa.gov.au
2. Department of Fisheries Private Mail Box 049, Port Vila, Vanuatu

Secretariat of the Pacific Community

LIVE REEF FISH

The live reef fish export and aquarium trade

Number 9 - December 2001

INFORMATION BULLETIN



Editor and group coordinator: Bob R. E. Johannes, 8 Tyndal Court, Bonnet Hill, Tugun QLD 4813, Australia. [In Australia, phone: 61 62298064; fax: 03 62298066. From overseas, phone: +61 3 62298064; fax: +61 3 62298066. E-mail: bobjohn@netpac.net.au] Production Information Section, Marine Resources Division, SPC, P.O. Box 5084, Noumea Cedex, New Caledonia. [Fax: +687 263018; e-mail: cplnfo@spc.int; http://www.spc.int/cplnfo/] Produced with financial assistance from France and Australia.

Editors' mutterings

The *SPC Traditional Marine Resource Management and Knowledge Bulletin*, a companion publication to this one, demonstrates that fishers possess extensive knowledge about the waters in which they fish and the species they catch — knowledge that can be invaluable to researchers and government resource managers. Most of the effort to record and use such knowledge has focused on the Pacific Islands, Africa, and South America. Very little such research has been done in Asia; yet there are certain important types of indigenous expertise on fish to be found there that probably dwarf that which can be found anywhere else in the world.

One source of knowledge are the fishers who collect grouper fry from the wild for mariculture. In the past 20 years there has been an outpouring of scientific publications on settlement of post-larval coral reef fishes. Yet there remains a great deal that researchers in this field could learn from Asian fry collectors. This is made clear by the work of Sadovy (2001) (this publication, #8: 2) and Johannes and Lam (1999) (this publication, #5: 9), although these authors have only scratched the surface.

Even more could be learned from marine aquarium fish collectors; the bulk of the world's wild-caught tropical marine aquarium fish, in terms of both numbers and species, come from Southeast Asia.

In addition, there are thousands of small-scale marine fish farmers in Asia from whom much practical knowledge about fish husbandry could be learned. These people are professionals too, and in many ways they understand their particular situations much better than we do. Since many of them cannot afford the kinds of commercial medicines used by big operators, some will undoubtedly have developed, through trial and

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Live reef food fishery trial generates problems in Vanuatu
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Advantages of pulse fishing in live product fisheries
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The live fish trade on Queensland's Great Barrier Reef: changes to historical fishing practices
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Clove oil used as an anaesthetic with juvenile tropical marine fish
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by B. Yeeung p. 19

Targeting the demand side of the live reef fish trade
by J. Simonetti p. 21

Back to sea for the future and more...
by C. Bakkebo p. 22



Noteworthy publications

- APEC/SEAFDEC. 2001. Husbandry and health management of groupers. APEC, Singapore and SEAFDEC, Iloilo, Philippines. 94 p.

For copies of the English version of this manual please contact Dr Cruz-Lacienda at the address below. The manual will also be translated into Filipino, Thai, Mandarin and Bahasa Indonesia and the translated versions will be available at the end of 2001.

Dr Erlinda R. Cruz-Lacienda, Aquaculture Department, Southeast Asian Fisheries Development Center, Tigbauan, 5021 Iloilo Philippines. Tel: 63-33-335-1099; Fax: 63-33-335-1008

- Manual for Reef Fish Disease Diagnosis

The Central Research Institute for Sea Exploration and Fisheries of Indonesia, supported by the Japan International Cooperation Agency (JICA) has had some success in identifying pathogens and diagnosing and establishing treatment and preventive measures for various marine finfish (mainly grouper and other coral reef species) and shrimps. A 49-page manual has recently been published to disseminate their findings. The manual contains information on clinical signs, causative agents and possible treatment methods for various viral, parasitic, bacterial and non-infectious diseases. It also contains colour photos illustrating clinical signs and causative agents for many of these diseases.

For a copy of this manual, write to: I. Koesaryani, Disease Section, Gandol Research Institute for Mariculture, PO Box 140, Singaraja 81101, Indonesia

- FAO/NACA. 2000. Asian regional technical guidelines on health management for the responsible movement of live aquatic animals and the Beijing Consensus and Implementation Strategy. FAO Fisheries Technical Paper No. 4202, Rome, FAO 53p.

- McGilvray, F. and T.T.C. Chan. 2001. The trade in live food fish: a Hong Kong perspective. International MarineLife Alliance. 16 p.

PIMRIS is a joint project of 5 international organisations concerned with fisheries and marine resource development in the Pacific Islands region. The project is executed by the Secretariat of the Pacific Community (SPC), the South Pacific Forum Fisheries Agency (SPFFA), the University of the South Pacific (USP), the South Pacific Applied Science Commission (SPASC), and the South Pacific Regional Environment Programme (SPREP). This bulletin is produced by SPC in part of its commitment to PIMRIS. The aim of PIMRIS is to improve



For more information on marine resources...

the availability of information on marine resources in Asia in the region, so as to support their rational development and management. PIMRIS activities include: the sense collection, cataloguing and archiving of technical documents, especially the meta-data; literature review, evaluation, repackaging and dissemination of information; provision of literature searches, question and answer services and bibliographic support; and assistance with the development of its resource reference, collection and databases on marine resources.


Secretariat of the Pacific Community

TRADITIONAL

Marine Resource Management and Knowledge

Number 13 — December 2001

INFORMATION BULLETIN



Group Coordinator and Bulletin Editor: Kenneth Rudolph, Kasuraga 2-24-20, Kita-ku, Kobe-shi, Hyogo-ken 651-1223, Japan. E-mail: k.rudolph@spc.int or kr1@spc.int. Production: Information Section, Marine Resources Division, SPC, B.P. DS, 98848 Noumea Cedex, New Caledonia. (Fax: +687 263818. E-mail: rj@spc.int) The bulletin is also available at: <http://www.spc.int/coastfish/>. Produced with financial assistance from France and Australia.

Note from the editor

Three interesting articles make up this issue: one from the region and two from far away.

The first, by Thomas Malm of Lund University, Sweden, provides a comprehensive study of customary marine tenure in the Kingdom of Tonga. Besides its main focus on the causes of the decline of the management system under the fast acting processes of urbanisation, demographic change and general modernisation, this contribution also provides baseline information on the local fisheries management situation in the country.

In the second contribution, 'Strategies and action plans to conserve biological diversity: a cultural and scientific challenge', Robert Kasisi and Peter Jacobs (both of the School of Landscape Architecture, Faculty of Environmental Design, University of Montreal), offer a critical review of the paths African countries have taken towards developing biodiversity strategies, actions plans or programmes. After briefly reviewing the origins of the biodiversity conservation concept, the authors examine the ambiguity inherent in such current terms as 'conservation', 'preservation' and 'protection'. Their debate revolves around the meaning of this concept, the origins of which are located in the cultural and economic domains. They then look at the different approaches used to develop biodiversity strategies and action plans in selected African countries. Each approach selected presents certain strengths and weaknesses. The authors propose an approach that should allow effective participation by all stakeholders via a deep appreciation of traditional or local knowledge, as the 'grass roots communities' frame of reference for natural resource management.

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Secretariat of the Pacific Community

BECHE-DE-MER

Number 15 — September 2001

INFORMATION BULLETIN



Editor and group coordinator: Chantal Conand, Université de La Réunion, Laboratoire de biologie marine, 97715 Saint-Denis Cedex, La Réunion, France. (Fax: +262 938166. E-mail: Chantal.Conand@univ-reunion.fr). Production: Information Section, Marine Resources Division, SPC, B.P. DS, 98848 Noumea Cedex, New Caledonia. (Fax: +687 263818. E-mail: cpinfo@spc.int. Website: <http://www.spc.int/coastfish/>). Produced with financial assistance from France and Australia.

Editorial

Welcome to the 15th issue of the Bulletin. The 'New Members' section on page 42 and the great number of hits on the Bulletin's web-pages (www.spc.int/coastfish/News/bdm/bdm.htm) are proof of the increasing interest raised by our publication. Thanks to all contributors who helped me in keeping the Bulletin alive and informative.

We start the 'New Information' section with an article on the Torres Strait beche-de-mer fishery (p. 2) followed by two articles on the different aspects of the biology of sea cucumbers sexual reproduction (p. 4 and p. 13). The 'Aquaculture News' column includes three original articles presenting new projects in Vietnam (p.17), Marshall Islands (p. 27) and New Zealand (p. 28).

Information on beche-de-mer prices is difficult to get. *INFOSH Trade News* is one of the best sources of information for seafood market trends and we are thankful to them for allowing us to reproduce a table presenting beche-de-mer prices on the Asian markets (p. 31). We also thank the National Fisheries Authority (NFA) of Papua New Guinea for providing information on their beche-de-mer export prices (p. 30). Sharing information is the main aim of this bulletin and we encourage other fisheries departments from within and outside the Pacific region to follow NFA's example.

I draw again your attention to the 'Echinoderms Newsletter' that is available on the Web (www.nmnh.si.edu/iz/echinoderm/) and to the echinoderms forum that was created after the International Conference in Dunedin. You can subscribe by contacting sabine.strohmann@se or by sending an e-mail to listserv@nmnh.si.edu and including on the first line of the message SUBSCRIBE ECHINODERM-L, your surname and first name, but no other text.

Chantal Conand

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Secretariat of the Pacific Community

Women in Fisheries

Number 8 — March 2001

INFORMATION BULLETIN



Coordinator: Lyn Lambeth, Community Fisheries Officer, SPC, B.P. DS, 98848 Noumea Cedex, New Caledonia. (Phone: +687 262000. Fax: +687 263818. E-mail: LynL@spc.int). Production: Information Section, Marine Resources Division, SPC (Fax: +687 263818. E-mail: cpinfo@spc.int). Printed with financial assistance from Australia and New Zealand.

Introduction

Welcome to the eighth issue of the Women in Fisheries Special Interest Group Bulletin. This issue reports on the activities of the SPC Community Fisheries Section, and includes the appointment of a new Community Fisheries Adviser, workshops in Tuvalu and Kosrae, field work on marine invertebrates collected by women in Niue, assistance for the new community-based fisheries management programme in American Samoa, and a review of the village fisheries management plans in Samoa.

For this issue I was assisted by Lilian Fay Sauni, a USP Masters student in marine science who was on a training attachment with the SPC Community Fisheries Section in November 2000. Lilian helped with the compilation of articles for the *What's happening within the region* and *What's happening outside the region* sections.

From around the Pacific region we have a tribute to Anne Luitor, National Women's Interest Officer for FSM, who lost her battle with breast cancer in December 2000; a report on marine conservation and tourism development for the Marshall Islands; the crab fisherwomen of New Caledonia; and fisheries training for Pacific Island women in New Zealand.

The news from outside the region includes an interview with the female president of a fisherman's cooperative in Brazil; a workshop on gender and coastal fishing communities in Latin America; and former fighters turning to a more peaceful life of seaweed farming in Mindanao, Philippines.

Details and reviews of books and publications appear at the end of this issue.

Contributions in the form of articles, papers, news and information are welcome. Articles can be in French or English; the bulletin is published separately in both languages.

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BOOKS & PUBLICATIONS



Booklet on management of bleached coral reefs

by Susie Westmacott, Kristian Teleki, Sue Wells and Jordan West

Since the 1980s, the phenomenon of coral bleaching has become more frequent, widespread and severe. Global climate change appears to be the main cause. Long periods of unusually warm sea temperatures in 1998 led to wide-scale bleaching of coral reefs in the Indian Ocean, the Pacific Ocean and the Caribbean Sea. Bleached corals expel their symbiotic algae and become susceptible to disease and overgrowth by other kinds of algae. In the Seychelles Islands in the western Indian Ocean, coral reefs were particularly hard hit by bleaching, and more than 90 per cent of corals died.

Climate change and other human impacts are destroying the coral reefs of the world. Scientists estimate that one quarter of the coral reefs have already been destroyed, and that a third of the remaining reefs are severely threatened. Urgent measures are needed to protect remaining reefs.

The World Conservation Union (IUCN) has published a booklet, *Management of Bleached and Severely Damaged Reefs*, to provide guidance on how to protect and manage degraded coral reefs. The booklet is available in six languages (English, French, Spanish, Kiswahili, Indonesian and Portuguese) was produced in cooperation with the Secretariat of the Convention on Biological

Diversity, the World Wide Fund for Nature (WWF), and the US Agency for International Development (USAID).

The booklet can be ordered from:

IUCN Publication Services Unit
219c Hunningdon Road
Cambridge CB3 0DL, UK

Tel: +44-1223-277894.

Fax: +44-1223-277175.

E-mail: info@books.iucn.org

www.iucn.org/2000/about/content/index.html

or from:

Sue Wells
IUCN East African Regional Office
PO Box 68200
Nairobi, Kenya

Tel: +254-2-3000405

Fax: +254-2-3006163

E-mail: smw@iucn.org

PUBLICATIONS and ONLINE RESOURCES

AQUAFIND

<http://www.aquafind.com>

Aquafind is an aquatic directory that allows users unrestricted access, free of charge, to search for aquatic species suppliers, aquaculture equipment suppliers, or aquaculture service suppliers. There are also four different trading boards available providing an open forum for the exchange of aquacultural related messages, free of charge. In addition, links to fish markets and auctions, species links, educational resources, book resources as well as an aquaculture events calendar are provided. To gain added exposure to the market place for yourself or company use the simple registration form and add your name or company name to our searchable list of **Fish Producers** or **Equipment Suppliers**.

Source: <http://www.aquafind.com>

WORLD OCEAN ATLAS SERIES and INTERNATIONAL OCEAN ATLAS AND INFORMATION SERIES

Includes climatological fields and statistics on a one-degree grid including temperature, salinity, oxygen, nutrients, and chlorophyll. These fields may be viewed for the world ocean or by individual basins. The fields may be especially useful for educational purposes.

The Ocean Climate Laboratory of the National Oceanographic Data Center (NODC)/World Data Center A, Oceanography

- 1) Access the NODC Home page using the following address: www.nodc.noaa.gov
- 2) Click on "WORLD OCEAN ATLAS and DATABASE 2001"

New **WODselect** Online Data Retrieval System

The *WODselect* interface allows a user to search *World Ocean Database 2001* using a user-specified search criteria. A distribution map and station count of these search criteria will give the user the option to have the data extracted and placed on the NODC FTP site.

WORLD OCEAN DATABASE 2001 Online Data

- **Plankton Subset of World Ocean Database Online Data**

WORLD OCEAN ATLAS 2001 Online Data

WORLD OCEAN ATLAS 2001 FIGURES Online Images

WORLD OCEAN DATABASE 1998 Online Data

WORLD OCEAN ATLAS 1998 Online Data

- **Yearly and Pentadal Anomalies from WOA98 Online Data**

- **Interannual Standard Deviation of Seasonal Temperature Anomaly Fields**

WORLD OCEAN ATLAS 1998 FIGURES Online Data

- **Blended In Situ-CZCS Chlorophyll Data Set Online Data**

WORLD OCEAN ATLAS 1994(WOA94)

- High Resolution (1/4 degree) Temperature and Salinity Analyses of the World's Oceans
- Seasonal Analyses of Phosphate
- Dynamic Height
- Mixed Layer Depths
- Quality Control of Oxygen, Temperature and Salinity Data

ATLAS OF SURFACE MARINE DATA 1994(ASMD94)

International Ocean Atlas and Information Series

Vol. 6 ZOOPLANKTON OF THE ARCTIC SEAS 2002

Vol. 5 RUSSIAN MARINE EXPEDITIONARY INVESTIGATIONS OF THE WORLD OCEAN pdf (8.4 KB)

Vol. 3 HYDROCHEMICAL ATLAS OF THE SEA OF OKHOTSK Online Data

Vol. 2 BIOLOGICAL ATLAS OF THE ARCTIC SEAS 2000:

- Plankton of the Barents and Kara Seas Online Data

Vol. 1 CLIMATIC ATLAS OF THE BARENTS SEA 1998

Source: www.nodc.noaa.gov

DEPTH-FINDER:

The newsletter for active divers published by Scuba Diving magazine.

Sample Contents:

- BC Survival Skills www.scubadiving.com/training/instruction/safeascent.shtml
- Savvy Diver Tip: Beware of Silent Hypothermia
- Free Stuff on the Web
- Dive Medicine: Quick Fixes for Diving Injuries
- The Top 10 List: Things Not to Say on a Dive Boat
- Gear Review: Pocket-Sized Dive Lights
- Cool Web Sites for Divers
- Reader Ratings: Hawaii
- Savvy Diver Tip: How to Have a Great Boat Dive

With two-issue trial subscription to Scuba Diving -- the magazine divers trust -- you can get a training and safety guides : "Dive Like a Pro -- 200 Tips and Techniques." Free. Go to: <http://commerce.cdsfulfillment.com/SC2/subscriptions.cgi>

Adventure of scuba diving: <http://www.scubadiving.com/experiencetheadventure>

Sign-up for your FREE personalized Scuba Diving e-mail:

yourname@scubadiving.com. Receive scuba diving tips, information, and other cool stuff every time you send and receive mail. Go to <http://mail.chek.com/signup.php3?domain=scubadiving.com>

Quick Fixes for Common Dive Injuries:

<http://www.scubadiving.com/training/medicine/quickfix.shtml>

Source: Scuba Diving magazine, 6600
Abercorn St., Suite 208, Savannah, GA 31405. Tel: (912) 351-0855.
E-mail: newsletter@depth-finder.com.

FAO FISHERIES STATISTICS

<http://www.fao.org/WAICENT/FAOINFO/FISHERY/statist/FISOFT/FISHPLUS.HTM>

FISHSTAT is now also available on CD ROM.

Fishstat Plus provides access to FAO Fishery Statistics of various sorts. The system consists of the main module and the datasets. Each of the following datasets can be installed and uninstalled separately:

- * Aquaculture production (quantities, tons) 1984-1997:
- * Aquaculture production (values, thousands US\$) 1984-1997:
- * Global Fish Capture 1984-1997:
- * Global Fish Production 1950-1997:
- * Trade and production 1972-1996:
- * Eastern Central Atlantic production 1972-1996:
- * Mediterranean and Black Sea production 1972-1996:

The CD ROM is at present distributed to institutions free of charge. Request via my Email and remember to include full mailing address.

*Jean Collins, Fisheries Branch Library
Food and Agriculture Organization
of the United Nations
Via delle Terme di Caracalla
00100 Rome
Italy
Phone: 39-06-57054742 Fax: 39-06-57052476
E-Mail: jean.collins@fao.org*

FAOTERM

<http://www.fao.org/faoterm/default.htm>

The FAO Terminological Database is available on-line. The site has been updated and redesigned in the five FAO languages: Arabic, Chinese, English, French and Spanish. It contains:

- FAOTERM Terminological Database (containing technical terms and titles in five languages)
- The FAO Corporate Names of Countries database
- Links to international terminology databases
- Sites of interest to translators
- Information on the FAO Terminology and Reference Group

*Source: Jean Collins, Fisheries Branch Library
Food and Agriculture Organization
of the United Nations
ITALY*

CNAV - CORAL NAVIGATION

<http://www.aims.gov.au/c-nav>

C-NAV is a CD-ROM that focuses on identifying coral reef organisms using simple descriptive categories. The identification categories described are those recommended by Reef Check and the Global Coral Reef Monitoring Network (GCRMN). C-NAV provides reference images and clear definitions for life forms to help ensure that identifications are consistent using these global standards. It features short documentary movies, a large searchable image database and glossary. The interactive material allows users to explore reef a variety of reef habitats.

CNAV is designed for two main areas of application.

1. For teachers, trainers or those working in coral reef habitats to use as a teaching tool or for their own reference material.
2. For students involved in field based coral ecology or reef monitoring courses where the ability to preview and review the benthic animals and plants that form coral reef habitats will enhance their learning experience.

*Source: Mary Anne Temby
Manager Information Services
Australian Institute of Marine Science.*

CEPHBASE: A DATABASE ABOUT CEPHALOPODS

<http://www.cephbase.utmb.edu/index.html>

Cephalopods – the class of mollusks that contains octopuses, squids, cuttlefish and nautilus. CephBase contains the following major sub pages: Species Search, Image Database, Video Database, Reference Database, Researcher Directory, Predators Database and Prey Database.

CephBase is part of the Census of Marine Life, an international program to explain the diversity, distribution and abundance of marine life.

*Excerpts from: Dr. James B. Wood
CephBase Project Manager
National Resource Center for Cephalopods*

Source: iamslic@ucsd.edu 17 May 2001

INTERNET GUIDE TO INTERNATIONAL FISHERIES LAW

www.oceanlaw.net.

Cardiff Law School

A comprehensive resource centre for information on international fisheries law and management. It is designed for academics, students and practitioners. It includes a considerable collection of international agreements and other documents relating to international fisheries, information on international fisheries organizations, a glossary of fisheries terms and a large collection of links to other sites and information of interest on the Internet.

*Source: Internet Guide to International Fisheries Law announcement
© Chris Hedley 2000*

CORALS OF THE WORLD (3 VOL SET)

<http://www.aims.gov.au/pages/coralsworld/cotw-01.html>

Soft Corals and Sea Fans : a comprehensive guide to indo-pacific coral reefs.

<http://www.aims.gov.au/pages/facilities/bookshop/bs-soft-corals01.html>

For the latest info on **Crown of Thorns starfish and monitoring data** check

<http://www.aims.gov.au/reef-monitoring>.

*Source: Mary Anne Temby - Manager Information Services
Australian Institute of Marine Science.*

**GLOBAL DIRECTORY OF MARINE (AND FRESHWATER) PROFESSIONALS
(GLODIR)**

<http://ioc.unesco.org/glodir/index.htm>

An excellent resource that helps marine and freshwater scientists and graduate students contact other researchers and learn about their publications. Developed and maintained by the Intergovernmental Oceanographic Commission of UNESCO (IOC), the site hosts a database of over 10,000 records, with information on individuals from around the world involved in all aspects of marine or freshwater research and management. Users can search the database by name, institution, country, and activities keyword, as well as perform an advanced search with a host of modifiers. In addition, users can also search a database of publication citations by keyword. Any marine or freshwater professional is welcome to enter their personal information and publication citations.

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