

# What's New in Aquaculture

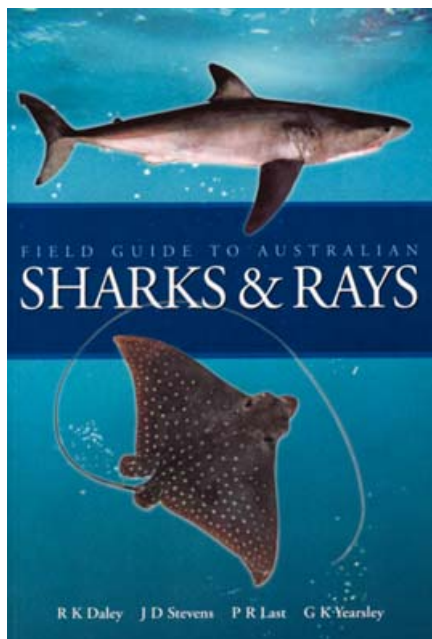
## CD: APAARI Success Stories

The Asia-Pacific Association of Agricultural Research Institutions (APAARI) have published a collection of 17 success stories on the development of new agricultural products, three of which are aquaculture related: Tilapia farming in the Philippines, Bivalve Mariculture in India, and Farming of Red Seaweeds in the Philippines.

System requirements: Acrobat Reader. Available from the APAARI Secretariat, FAO Regional Office for Asia & the Pacific, Maliwan Mansion, Phra Atit Road, Bangkok 10200, THAILAND, Tel.: (662) 281-7844, Fax: (662) 280-0445.

## Field Guide to Australian Sharks and Rays

A small user-friendly guidebook to about 100 species of shark, ray and chimerids. It has a user-friendly format with pictorial keys to families and full colour photographs annotated with key features for identification. Species are arranged according to their broad distribution – pelagic, northern demersal, southern demersal and there is also an interesting section on 'rarely caught' species.



Each species has a short description outlining key features that can be used to distinguish it from its near relatives. The main text also provides fishery and conservation information and remarks of general interest such as size. A distribution map is provided along with an indication of the main fishing gear/method of capture. The guide was written by some of Australia's leading taxonomic experts including R.K. Daley, J.D. Stevens, P.R. Last and G.K. Yearsley. Published by the CSIRO Division of Marine Research, the Fisheries Research and Development Corporation and the Australian Fisheries Management Authority. 84 pages.

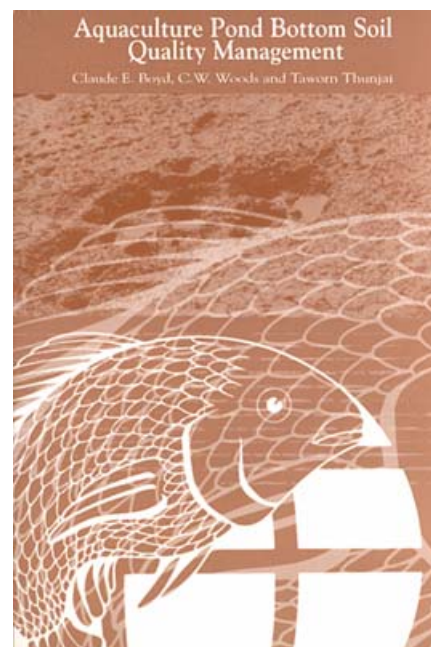
Price: AUD\$ 24.95 plus international freight. Available from CSIRO Publishing, PO Box 1139, Collingwood, VIC 3066, Australia. Fax +61 (3) 9662 7555, email publishing.sales@csiro.au, www.publish.csiro.au.

*Conclusion: Recommended as a portable general field guide. However, those seeking a comprehensive reference should try to get a copy of the 1994 publication Sharks and Rays of Australia (also by P.R. Last and J.D. Stevens) which unfortunately is now out of print.*

## Aquaculture Pond Bottom Soil Quality Management

Written by Claude E. Boyd, C.W. Woods and Taworn Thunjai, 2002, 41pp.

This is a small and practical manual that will be popular with anyone working on pond maintenance and repair. It has three sections. The first section, pond soils, provides a short review of soil properties and their interaction with pond water. The second, pond soil treatments, provides general guidelines for carrying out various remedial measures including liming, drying, tilling, sediment removal, fertilization, bottom raking, disinfection and probiotics. , and iii) soil analyses provides simple techniques for assessing soil condition.



The nice thing about this book is that it is written with practical applications in mind – the subjects and techniques described – including the soil analyses – are things you can do on the farm. This is the book that you will be flicking through while standing in the bottom of your dried-out pond !

Available from: Pond Dynamics/Aquaculture Collaborative Research Support Program, Oregon State University, Corvallis, Oregon 97331-1641, Tel +1 541 737 6416, Fax +1 541 3447, www.pdacrsp.orst.edu

*Conclusion: Recommended as a good pocket guide/ready reference to pond soil management for technicians and farm managers. For a comprehensive reference book nothing beats Boyd's earlier book Water Quality in Ponds for Aquaculture (1990) but you won't be carrying that one around in your pocket.*

## Nutrient Requirements and Feeding of Finfish for Aquaculture

C.D. Webster and C.E. Lim (eds.) 418pp.

This is a 'milestone' publication, a book that takes a detailed snapshot of the current state of knowledge in a field. It summarises the current state of knowledge in the nutritional

requirements of about 30 groups of important aquaculture species from all over the world.

Each species is dealt with in an individual chapter written by a nutritionist who is an acknowledged expert. Sections include i) introduction to basic biology and commercial importance, ii) nutrient requirements (protein and amino acids; energy; lipid and fatty acids; carbohydrates; vitamins and minerals), iii) formulation of practical diets iv) feeding practices and v) a detailed reference list.

Additional information is provided for some species – for example the gilt-head sea bream *Sparus aurata* includes some nice sub-sections on the nutrient requirements of different life stages (ie. larval fish, juveniles and broodstock), and the Atlantic salmon section also covers carotenoid pigments. Overall, the quality and presentation of the information is very high. The authors have gone to considerable lengths to review and summarise the literature.

It's nice to see good coverage of the Asian region in such a volume. Asian species include the Asian sea bass (*Lates calcarifer*), Red sea bream (*Pagrus major*), Japanese flounder (*Paralichthys olivaceus*), yellowtail (*Seriola quinqueradiata*), milkfish (*Chanos chanos*), common carp (*Cyprinus carpio*), Indian major carps, tilapia, freshwater eels (*Anguilla* spp.), silver perch (*Bidyanus bidyanus*), snakehead (*Chanos* spp.) and *Pangasius* catfish. The book also covers major European and American species.

Cost: US\$140 + freight. Available from: CABI publishing, CAB International, Nosworthy Way, Wallingford, Oxon OX10 8DE, UK. Tel +44(0)1491 832111, Fax +44(0)1491 829292, email orders@cabi.org, www.cabi-publishing.org.

*Conclusion: Highly recommended, a very detailed resource. However, you may wish to check that it covers your species of interest before you purchase since most of the information is species-specific.*

### Highland Fisheries & Aquatic Resource Management

K.K. Vass, H.S. Raina (Eds.) 2002. 363pp.

Highland development is becoming a priority in many countries as these areas are not keeping pace with development in lowlands, due to more difficult climatic, topographical and resource constraints. In particular, highland fisheries essential to the livelihoods of many communities have not received the attention they deserve. This book attempts to address some of these issues with a collection of 31 scientific reviews. The first section provides an overview of the status of highland fisheries in India's highland/coldwater fisheries. The book moves on to address human resource development in capture fisheries, with additional sections on aquaculture and biology (mostly concerning mahseer and trout), and conservation and management in coldwater fisheries.

There is an interesting paper summarizing internet application in fisheries, which summarizes many of the websites and resources available on the internet.

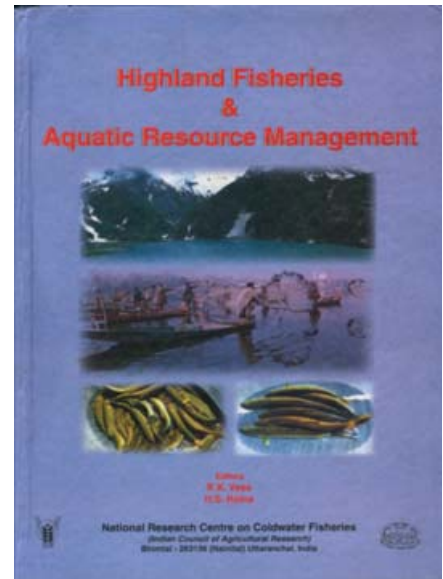
Available from the Director, NRC on Coldwater Fisheries, Bhimtal 263136 (Nainital), Uttarakhand, India.

*Conclusion: A useful reference book for hill fishery scientists, planners, policy makers, farmers and entrepreneurs alike.*

### Textbook of Fish Processing Technology

K. Gopakumar (Ed.), 491pp.

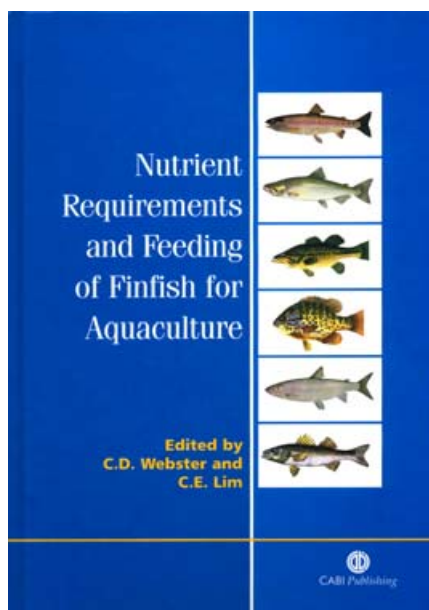
Internationally fish is traded mostly in frozen form. New species and value-added fishery products are finding niches as the international trade



expands. Fish processing technology has become one of the most developed branches of food processing science.

In India a number of agricultural and conventional universities have started programmes at the graduate and post-graduate levels. However, until now there has been no textbook or comprehensive reference available on the subject. This book provides a detailed overview of fish processing technology. Coverage includes: Biochemical composition of fish; post mortem changes and quality assessment; chilling (both direct and indirect); fish freezing technology; bacteriology of fish and shellfish; proteins and lipids of marine products and their changes during processing; irradiation; fundamentals of drying

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brick and cement walled for durability, accounts for 7-10% of the paddy field area while the ditch occupies 3-5% of the total area. Each hectare of paddy filed with such renovation could store up to 7,500m<sup>3</sup> of water during rainy season. The sump could be used as reservoir for watering vegetables in dry season.

Effective extension service at various levels, financial support and incentive policy by government have played important roles in the wide spread of rice-fish culture in China in the past two decades. At present, the government has formed a national fisheries extension network and extension activities are carried out at four different levels under the National Fisheries Extension Centre, namely provincial, prefecture, county and township levels. In some places, extensions officers also help to secure fish seed supply and marketing information for farmers. Rice-fish culture has been incorporated into the overall rural development plan and agriculture development plan by many local governments. In less developed and remote regions, financial support in the initial stage is a key factor to help the resource-poor farmers in paddy field renovation and first run operations. Financial support from the government is usually delivered in the forms of construction materials and seeds, etc. Tax exemption is applied to rice-fish culture in places where it is promoted poverty reduction purpose. Such incentive policy should be continued.

It is apparent that small-scale rice-fish culture can bring improved economic benefits to individual farmer families. With more than 60% of China's population occupied in agriculture, there is a need for further extension on rice-fish culture among rural communities on a mass scale, where it is possible, in order that its development can benefit the economy and well being of the whole society. Only when rice-fish culture is practiced on a mass scale will its socio-economic and environmental benefit be realized. Therefore, the need in the immediate future for aquaculture development should include rice-fish culture as one of the top agenda items.

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fish; smoked and marinated fishery products; canning; silage; packing; quality assurance, HACCP and sensory evaluation.

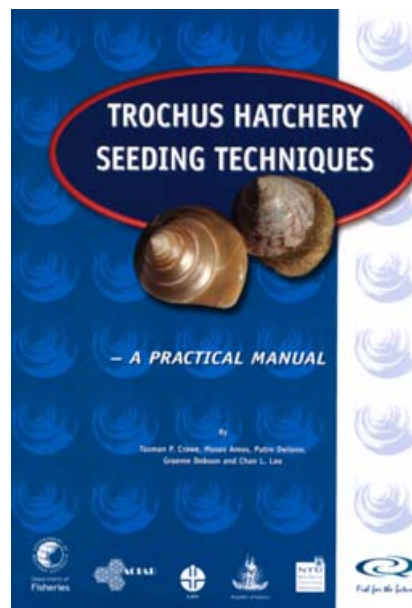
Available from: Directorate of Information and Publications of Agriculture (DIPA), Krishi Anusandhan Bhavan, Pusa, New Delhi-110012, Phone: 91-11-25731350, Fax : 91-11-25731282, <http://www.icar.org.in/icar6.htm>

*Conclusion: Recommended. This book provides a useful insight into manufacturing processes and their impact on product life, quality and nutritional value.*

## Trochus hatchery seeding techniques – a practical manual

T.P. Crowe, M. Amos, P. Dwiono, G. Dobson and C. Lee. 32pp.

This manual is written for the general public, fisheries extension officers and artisanal fishermen. It aims to provide a basic overview of the biology of trochus and its production in aquaculture facilities. It also summarises the findings and protocols of the ACIAR Trochus Reseeding Research Project in practical terms. The manual contains sections on i) the biology and life cycle of trochus, ii) hatchery production of trochus and iii) reseedling of trochus. The manual addresses practical issues such as how to spawn and raise the shellfish, selection of suitable sites, size of



trochus at release, how to improve survival and packing and handling. It includes a reference section for readers who wish to explore topics in more depth.

Available from the Australian Centre for International Agricultural Research, GPO Box 1571, Canberra ACT 2601, Australia, Tel: +61 (02) 6217 0500, Fax: +61 (02) 6217 0501, email [comms@aciarc.gov.au](mailto:comms@aciarc.gov.au) <http://www.aciarc.gov.au/web.nsf/publicationcategory?openform>

*Conclusion: A useful introductory manual and a good starting point for people wishing to become involved in trochus culture.*

## Aquaculture Compendium - case study component

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developed from published materials from our Compendium partners (AIT, IoA, NACA and WAS), and collaborators (MRC, STREAM), with discussions on-going with other potential collaborators (Deacon University, FAO, SEAFDEC, WorldFish Center). Although it is CABI's intention to cover case studies in other selected countries more fully in subsequent editions of the Aquaculture Compendium, it would benefit the first release of the Compendium if it were to have wider case study coverage. I intend to "cherry pick" systems and issues of particular relevance and interest from around the world so do contact me if you wish to contribute.

Formats and examples of case studies are in preparation. Each case study is to be brief, about 10 pages, with summarized text and bullet points. There will be a standardised table of contents for growout production systems although for other topics it will be flexible because of diverse content. Case studies will be richly illustrated with photographs, tables and graphs.

For more information contact Martin Parr at [m.parr@cabi.org](mailto:m.parr@cabi.org). Specifically for case studies, contact Peter Edwards [pedwards@inet.co.th](mailto:pedwards@inet.co.th). Contributors will receive a small honorarium to express appreciation for their input to the Compendium.