



Handbook of Mangroves in the Philippines - Panay



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**FRUITS
OF SOME
MANGROVE
SPECIES**

1. *Rhizophora mucronata*
2. *Rhizophora apiculata*
3. *Bruguiera gymnorrhiza*
4. *Bruguiera parviflora*
5. *Bruguiera cylindrica*
6. *Bruguiera sexangula*
7. *Ceriops decandra*
8. *Ceriops tagal*
9. *Xylocarpus moluccensis*
10. *Xylocarpus granatum*
11. *Nypa fruticans*
12. *Avicennia alba*
13. *Avicennia officinalis*
14. *Avicennia rumphiana*
15. *Avicennia marina*
16. *Campostemon chinensis*
17. *Aegiceras corniculatum*
18. *Avicennia floridana*
19. *Sonneratia tomentosa*
20. *Osbornia octodonta*
21. *Lumnitzera racemosa*
22. *Lumnitzera littorea*
23. *Sonneratia alba*
24. *Sonneratia caseolaris*



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TO. _____

COMPLIMENTS OF SEAFDEC AQUACULTURE
DEPARTMENT (TIGBAUAN, ILOILO, PHILIPPINES) AND
UNESCO (JAKARTA, INDONESIA)

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Southeast Asian Fisheries Development Center Aquaculture Department
UNESCO Man and the Biosphere

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Cover (photo by J.P. Altamirano):

The mangrove plantation in New Buswang, Kalibo, Aklan is a favorite among local folks: the planted *Rhizophora* species are now surrounded by a natural band of *Sonneratia alba* trees.

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Southeast Asian Fisheries Development Center
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Tigbauan, Iloilo, Philippines

FOREWORD

As early as April 1996, the SEAFDEC Council had instructed its Aquaculture Department (AQD) to conduct studies on mangroves within the context of environment-friendly aquaculture. This was a proactive initiative in light of the negative environmental impacts linked to modern aquaculture, foremost among them the loss of mangroves to shrimp ponds. The five-year Mangrove-Friendly Aquaculture Project was implemented in 1998, which included the Mangrove-Friendly Aquaculture Planning Workshop convened in Iloilo City in early 2000. Following the Workshop recommendations, AQD has undertaken research on the capacity of mangroves to process nutrients from intensive shrimp culture ponds with funding from the Government of Japan. The Department also has European Commission-funded studies on aquasilviculture within pen systems where mud crab rearing is integrated with mangroves, and on mud crab fisheries in mangrove areas.

In the course of field activities, senior researchers of AQD and their colleagues from other institutions have built an impressive storehouse of information on mangroves in Panay and elsewhere in the Philippines. The generous financial support from UNESCO-Man and the Biosphere has made possible the documentation of such information.

It is therefore with pride that I welcome the publication of this valuable sourcebook that should prove useful to the general public and to technical people alike.


Rolando R. Platon
Chief



Regional Office for Science and Technology for Southeast Asia
Jakarta, Indonesia

FOREWORD

It is my great pleasure to recommend this 'Handbook of Mangroves in the Philippines – Panay' to all those interested in conservation and sustainable use of mangroves. The idea for such a handbook was first broached by Dr. J.H. Primavera during the Ecotone X MAB Regional Seminar on Sustainable Management of Coastal Ecosystems in November 2001. Because the dissemination of scientific information on mangroves was considered essential to mobilize a broader participation of society in mangrove conservation and rehabilitation, a formal project proposal was formulated for support under the UNESCO-MAB-ASPACO Project^{1,2}. At the start of 2004, Dr. Primavera and her colleagues have completed the work and now present to us the outstanding product.

The Handbook provides key information on more than 30 species of mangroves in Panay Island and surrounding areas. It is amazing to see the rich mangrove diversity in Panay, where almost no pristine mangroves remain owing to other development activities over the years. It is believed that the Handbook will help promote mangrove rehabilitation in Panay, and set a model for other areas in the Philippines as well. This handbook is well designed for non-specialist readers, with precise firsthand scientific data and illustrative descriptions as well as visual presentation. From only two pages devoted to each species, one can learn much about features, distribution, and traditional and economic uses of the species. To ensure user-friendliness, the draft manuscript was pretested by students and teachers.

We believe this Handbook will be very welcome by schools, local government officials, NGOs, and the general public. UNESCO hopes that the Handbook will be updated and eventually become available in electronic format, e.g. CD-ROM and on the Web, to reach a broader audience.

May I congratulate the authors for this excellent publication.

A handwritten signature in black ink, appearing to read "Han Qunli", written over a white background.

Han Qunli
Programme Specialist
for Environmental Science

¹MAB - Man and the Biosphere, ²ASPACO (Asia Pacific Co-operation for the Sustainable Use of Renewable Resources in Biosphere Reserves and Similarly Managed Areas) is an international project of MAB started in 2001 focusing on mangroves and coastal ecosystem management, with financial support from the Government of Japan to UNESCO

PREFACE

Through our many field studies, we have come to realize that few Filipinos are aware of mangroves. Often, coastal folk and environmental non-governmental organizations eager to rehabilitate degraded mangrove sites, and students interested in doing mangrove research cannot proceed for lack of basic information on local mangroves. We therefore aim to provide laypersons and researchers alike with a convenient guidebook for identifying species in the field based mainly on appearance and habitat. Unlike previous Philippine mangrove guides, we present detailed plant descriptions and available information on traditional uses.

For the realization of a long-cherished dream to write a mangrove handbook, our gratitude goes to the Man and the Biosphere ASPACO Project of UNESCO. Their funding provided photographic and other equipment and supported our numerous field trips. Thanks are due the SEAFDEC Aquaculture Department for vehicles and logistical support. We also acknowledge the cooperation of local government officials including Aklan Governor Florencio Miraflores and Bugtong Bato Barangay Captain Norberto Soliva; field assistance from Rose Sacal and Fred Sabido of Mindanao State University-Naawan, Jerryco Hadjerol and Mando Dalig of Sultan Kudarat Polytechnic College, May Sansait, Edgar Hortillosa and Rea Busaing of the University of the Philippines in the Visayas, Allan Traje of Ibajay, Aklan, and Sev Angara of Baler, Aurora; manuscript pretesting by Dr. Josette Biyo and Paz Kuhlmann with their respective classes at the Philippine Science High School in Iloilo and Aklan State University School of Fisheries and Marine Science; and layout and printing advice from Mila Castaños. We appreciate the meticulous comments and comprehensive suggestions from Emeritus Professor Colin Field of the University of Technology, Australia; Dr. Gordon Maxwell, FLS of the The Open University of Hong Kong; Dr. Norman Duke of The University of Queensland, Australia; Calixto Yao, Cebu City-based consultant formerly of the DENR; and Marta Vannucci, who are among the world's top mangrove experts. Finally, we acknowledge our families for bearing with the endless hours of field work away from home.

We hope this small volume will contribute to the preservation, conservation and sustainable management of Philippine mangroves. We dedicate it to present and future generations of Filipinos (among them Ysmael Primavera Tirol of Aklan, northern Panay) so they will learn to respect and appreciate this important ecosystem, and be captivated by its diversity and beauty.

JHP, RBS, MJHLL and JPA

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