

# Tropical Freshwater Wetlands

# Developments in Hydrobiology 112

*Series editor*  
H. J. Dumont

# Tropical Freshwater Wetlands

A Guide to Current Knowledge and  
Sustainable Management

*by*

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Springer-Science+Business Media, B.V.

A C.I.P. Catalogue record for this book is available from the Library of Congress.

ISBN 978-90-481-4635-2      ISBN 978-94-015-8398-5 (eBook)  
DOI 10.1007/978-94-015-8398-5

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*Printed on acid-free paper*

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Originally published by Commission of the European Communities in 1995.

Softcover reprint of the hardcover 1st edition 1995

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"Perhaps reliance on the Bible prepares one for the belief that all truth is to be found in a single book"

Nigel Barley  
*The Innocent Anthropologist*

*Cover photograph*

Shallow water body in a depression, Burkina Faso. © R. Sloomweg.

*Translation*

The original version of this volume has been written in French, with the exception of case studies, and some text boxes and tables which have been prepared in English. French texts have been translated into English by Vox et Lingua, Amsterdam, the Netherlands. Additional translation has been provided by the author.



The European Commission has financed the preparation of this volume (Article 946, Contract No. 88-29 and Contract 80-33).



This volume is the output of a project of the Dutch Working Group on the Sustainable Use and Management of Tropical Wetlands (WTW). In January 1995, The WTW has become the WIW (Werkgroep Internationale Wetlanddeskundigen).



The Centre of Environmental Science, Leiden University, has implemented this project on behalf of the WTW.

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## FOREWORD AND ACKNOWLEDGEMENTS

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During the sixties, when my family lived in Morocco, we would often spend a few Sunday hours upstream of the mouth of the Moulouya, a river draining into the Mediterranean near the Algerian border. There, a natural pond rich in reeds and rushes expands and contracts ceaselessly according to the seasons and the years, climatic variation and the mood of the Moulouya. As a child, I would survey the constantly changing shoreline of this pond, or I would try to make out the fish turning about in the brownish water. I would attempt to get close to the varied birds without frightening them to hear what adventures the travellers told the residents. Or sometimes I would help my mother choose the rushes that were used to decorate our home. During that time my father would devote himself to fishing, trying to discover the secret of local fishermen who always seemed to be more successful and, more often than not, negotiating with them for a few fish that would save our evening meal.

Later on, I often saw spots like the pond of my childhood all over the world, but in particular in developing areas, and I noted how they function as magnets for humans, cattle and a large variety of wild animals. While working in different fields, ranging from the management of water resources to desertification control, I witnessed the diverse ways in which people use resources as well as the richness and variety of both wildlife and vegetation in such areas. This is how my awareness of the importance of 'wetlands' was awakened and progressively grew.

Many people who have worked on development projects in Africa, Asia, Latin America and Oceania have made similar observations. Or they have noted some of the benefits accrued from freshwater wetlands in humid as well as arid regions.

None the less, many fail to see these shallow water bodies, and these swamps, marshes and floodplains as indivisible units providing a wide range of highly valuable services and products. As a consequence, the actions they take often aim to increase the benefits of one of these services or products, but in general mean a decrease in the total value of the wetland and sometimes its destruction.

Others have become aware not only of the importance of wetlands, an importance which is comparable to that of the tropical forest, but also of the need to consider their management in a holistic, integrated manner. This group, like the former however, does not always have the knowledge or

instruments necessary for sustainable wetland management.

Finally, many development or nature conversation project planners and managers have not yet had the opportunity to 'become acquainted with' wetlands.

All will benefit from *Tropical Freshwater Wetlands*, which is at the same time a guide to current knowledge on freshwater wetlands, a guide to the sustainable management of these ecosystems and a guide to relevant sources of information and expertise. As its title indicates, this volume does not deal with brackish or saltwater wetlands (e.g. mangroves, coral reefs, salt marshes, etc.).

I wish to thank the Commission of the European Communities for having made possible the publication of this volume by financing the project proposed by the Dutch Working Group on the Sustainable Management of Tropical Wetlands (WTW) and implemented by the Centre of Environmental Science (CML) on behalf of the WTW.

Such a book is the fruit of an intense, multi-faceted work which cannot be implemented without the support, in various forms, of a great number of persons. It is impossible to mention here all the specialists who shared their expertise with me and offered me some of their precious time. I am truly grateful to each and every one of them and ask them to accept my thanks in this general manner.

None the less, I cannot pass over the crucial role played by some experts, colleagues and friends between February 1989 and April 1995, the period during which the different phases of preparation and production of this 'guide' took place.

Carel Drijver, the 'spiritual father' of this volume, Bart van Lavieren and Roland Oosterbaan constituted the steering committee of the project. They gave me their confidence, shared their experience and knowledge and on many occasions offered me their help.

Aside from the members of the steering committee, I would like to thank Chris Barrow, Antonio Carlos Diegues, Patrick Dugan, Edward Maltby, Cornelia Nauen, Thayer Scudder, and Robin L. Welcomme who commented on early drafts. This led to an intense exchange of ideas which were sometimes contradictory but, none the less, always constructive. I benefited not only from their expert-

ise, but also from their advice, reservations, criticism and encouragement—which were frequently given with passion—on the form and the content of this work during its conceptual phase or during its actual preparation.

The authors of the case studies demonstrated the importance that they attach to wetlands in their willingness to relate their experiences as part of this volume. They also displayed a great deal of patience and good will in agreeing to my many demands and in revising their texts to satisfy what must sometimes have seemed as perfectionism on my part.

Gordon Claridge and Rosemary James were exceedingly hospitable to me during my stay in Java and Sumatra. The discussions we had at that time, the brief exchanges we have had since then and their warm friendship have inspired me more than they can imagine.

My colleagues and former colleagues at CML, in particular Wouter de Groot, Jeroen van Wetten, Roel Slootweg, Marcel Marchand, Jasper Fiselier and Adri Zuiderwijk supported me by sharing their scientific knowledge with me and helping me clarify my ideas. I would be remiss if I did not mention here that Wouter de Groot, Roel Slootweg, Jeroen van Wetten and Adri Zuiderwijk never hesitated to 'roll up their sleeves' and to dispense with practical matters having little to do with scholarly work, thereby alleviating part of the pressure due to time constraints.

Annelies Oskam and Corine Hendriks contributed their skill and kindness to this work on more than one occasion. They facilitated internal and external communication, helped me organize diverse activities, and undertook certain typing tasks not only

efficiently, but also, of course, under the press of time.

The Photography section and the Design section of the Biology Faculty of Leiden University took on the preparation of the illustrations used in this volume, understanding and diligently following my demands.

My current employer also has contributed substantially to the latest phases of this project. I would have been unable to finalize this English version if ECOTEC Resource in Haarlem, and its director, Joop de Schutter, had not been willing to cooperate by allowing me to set time aside for the purpose of this project.

And finally, I would certainly not have been able to implement and complete this project successfully without the unconditional support of Arendo Joustra.

I sincerely thank all of these persons and organizations for their generous contribution to this project. I wish they will share with me the pleasure I have had in completing this work: that of being able to favour a wider awareness of the immense value of wetlands on the one hand, and to contribute to the improvement of their management on the other.

Allow me to make very clear, however, that the opinions expressed in this book and any possible errors that might be found in it are mine and mine alone.

Henri Roggeri  
Amsterdam, April 1995