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BOOK REVIEW

C.S. Tucker, J.A. Hargreaves (eds): Environmental Best Management Practices for Aquaculture

Wiley-Blackwell, Oxford, 2008, Hardback, XIV + 592 pp, £84.99, ISBN-10: 0-8138-2027-8

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One criticism that can be made of *Environmental Best Management Practices for Aquaculture* is that the title is misleading. The range of topics covered is broader than that suggested by the title; so much so that the specifics of best management practices (BMPs) sometimes drown in a sea of aquaculture generalities. In addition, the approach adopted in parts of the book is insular and parochial, and the presentation is, on occasion, long-winded. The book, sponsored by the U.S. Aquaculture Society (USAS), is based upon a report submitted to the U.S. Environmental Protection Agency in December 2003. The USAS has a policy of sponsoring the publication of works that will promote aquaculture development in the USA, and the USAS preface provides pointers to what the reader can expect: 'The book addresses the development, implementation and economics of BMPs for specific aquaculture production systems in the United States but utilizes principles that can be applied globally'. In their preface, the editors take pains to explain what the book is not, before plumping for the description 'Ultimately, this is a book about farm-level technical solutions'. This statement is a reasonable description of large portions of the text, but the reader is sometimes left with the feeling that BMP messages become lost within the digressions into wider discussions of aquaculture development and systems operations. One can agree with the editors' statement that 'This book has been difficult to edit and we feel sure that our contributors would agree that the chapters were difficult to write'.

The fledging document upon which the book is based was made public in 2004, but quite a lot of new legislation, guidelines, recommendations and publications have appeared in the intervening years. The authors and editors have been reasonably successful at keeping abreast of developments and have incorporated recent material into the book; for example, some publications dating from 2005 to 2007 have been included. The book has 13 chapters prepared by a team of 18 authors and editors, representing academia, industry and both government and non-government agencies. The book also contains appendices that summarize guidelines on monitoring, the use of chemicals, species introductions and transfer, and codes of conduct. Many of the chapters include Best—or more often Better—Management Practices in their title; this is usually no more than paying lip-service to the

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book title. Most of these chapters provide information on farm site requirements and give descriptions of ways in which rearing systems and units can be constructed and operated to ensure efficient production of farmed species. However, this type of information can be found in general aquaculture textbooks, without any pretence of a BMP wrapping. In fact, the coverage of this aspect given in *Environmental Best Management Practices for Aquaculture* is often more comprehensive, and the presentation of concepts clearer, than that found in many student textbooks currently on the market.

The book opens with three chapters that provide a general background to U.S. and international aquaculture, including information on the rationale for the introduction of BMPs and the way in which the development of BMPs can be approached. There then follows a chapter that describes the history of environmental regulatory measures adopted in the USA, the impacts of environmental legislation upon aquaculture operations, and the approaches that have been adopted by state authorities, producers' organizations, and other interested parties to introduce BMPs. This general theme is continued in the next chapter, which deals with the development, implementation, and verification of BMPs. The next few chapters, which make up the core of the book, cover the design of aquaculture systems and their rational operation, including those of freshwater pond aquaculture, marine shrimp culture, net-pen aquaculture, flow-through systems, re-circulating systems, and the cultivation of bivalve molluscs. The penultimate chapter deals with fish health management, and the book closes with a chapter that covers economics and BMPs.

The positive aspects of this book are that the chapters have been well-researched, the subject matter is clearly presented, and each chapter has a quite extensive reference list. Most chapters have been written so that they can be read independently of the others. However, this is detrimental to continuity, and if several chapters are read at a single sitting, overlap and repetition become apparent. Portions of the text are, perhaps, too much of a stating of the obvious, and some readers may consider that there is an occasional lack of depth, although the reader is referred to sources for further reading. Other minor negative points include a number of discrepancies in the factual information given in different chapters and a few printing errors. On the whole, the technical production meets the high standard one has come to expect of Wiley-Blackwell. The cover and binding are solid, and the paper is of good quality. The printing is clear and even, the typeface is easy on the eye, and the reproduction of the line drawings, figures, tables, and black-and-white photographs is satisfactory.

Environmental Best Management Practices for Aquaculture has been produced, primarily, for the U.S. home-market, with an audience of producers, policy makers, and legislators in mind. The book should meet these needs and suit the tastes of these readers. Further, given that the subject matter covered is both broader and more comprehensive than suggested by the title *Environmental Best Management Practices for Aquaculture*, the book is a useful primer for those wanting an introduction to the U.S. aquaculture industry. As a bonus, some of the chapters could serve as supplementary reading for students taking college and university courses in aquaculture. On the other hand, those who turn to *Environmental Best Management Practices for Aquaculture* looking for a quick-fix, step-by-step guide to the application of BMPs in the context of international aquaculture will be disappointed.