

Preface to the First Edition

Why coastal wetlands? What is so important about them that a whole book is required to try to review and explain their large variety of properties? Of all the coastal habitats, wetlands are the least depicted in the tourist brochures because they lack those paradisiacal long, white sandy beaches backed by palm trees or expensive resort hotels close to transparent blue waters. In fact, most coastal wetlands are quite muddy and are more likely to be inhabited by crabs and worms than by charismatic fish, birds and mammals. Hence, most inhabitants of our world either have never thought about coastal wetlands or may consider them a nuisance, not realizing that their seafood dinner likely had its origin as a detrital food web in a salt marsh or mangrove swamp. Bahía Blanca (Argentina) inhabitants are a classical example: a city of over 300,000 people living within 10 km of a 2300-km² wetland, the largest of Argentina, but fewer than 40% have any idea that they are so close to the sea and a short distance of places that are globally unique (Perillo and Iribarne, 2003, in Chapter 6).

Similarly, there are many other coastlines dominated by wetlands, yet they are only seen as areas to exploit in an unsustainable fashion. For example, mangroves have served local communities for generations in many Asian tropical countries for harvesting wood and fish in contrast to their wholesale replacement for rice cultivation and shrimp farming.

Even though management guidelines have been available for decades, the negative

consequences of uninformed exploitation have resulted in poor or even total lack of management criteria by most governments at all levels. Even local stakeholders fail to act in their own best interest without consideration of the ecosystem goods and services that the nearby wetlands provide.

Coastal wetlands best develop along passive-margin coasts with low-gradient coastal plains and wide continental shelves. The combination of low hydraulic energy and gentle slope provides an ideal setting for the wetland development. Also passive margins are less prone to receive large episodic events like tsunamis. Tsunamis and storm surges, in particular, are major coast modifiers, but when they act on low coasts their effects are more far reaching than they are on higher relief coasts. For a wetland to form, there is a need for a particular geomorphological setting such as an embayment or estuary providing a relatively low-energy environment favoring sediment settling, deposition and preservation. However, that is only the beginning of a large and complex "life" where many geological (i.e., sediment supply, geological setting and isostasy), physical (i.e., oceanographic, atmospheric, fluvial, groundwater processes and sea level changes), chemical (i.e., nutrients, pollutants), biological (i.e., intervening flora and fauna), and anthropic factors play a wide spectra of roles. Coastal wetlands are areas that have combined physical sources and biological processes to develop structure that continues to take advantage of natural energy inputs.

This book has been planned to address in an integrated way all these processes and their consequences on the characterization and evolution of coastal wetlands. It aims to provide an integrated perspective on coastal wetlands as ecosystems for the public, engineers, scientists and resources managers. It is only after acquiring this perspective that scientists can confidently propose ecohydrologic solutions for managing these environments in an ecologically sustainable way. This is but one small step toward encouraging humanity to look beyond purely technological, and often failed, solutions to complex environmental problems.

This is done by focusing on the principal components considering the full range of environments from freshwater to subtidal and from polar to tropical systems. The book has been divided into seven parts starting from a synthesis chapter that integrates the whole book. Part I covers, in three chapters, the general description of the wetlands structured according to broad climatic regions and introduces the most important physical processes that are common to all coastal wetlands including some geomorphologic and modeling principles. Part II are specific to each particular type of wetland (tidal flats, marshes and seagrasses, and mangroves). Within each part (Parts III to V), there are chapters dealing with their particular geomorphology, sedimentology, biology and biogeochemistry. Finally Parts VI and VII provide insight into the restoration and management and sustainability and landscape dynamics.

As editors, our work was greatly facilitated by the tremendous cooperation and enthusiasm from each of the authors to complete this process that began mid 2006. Each author, an authority in his or her specialty, was specifically invited to write a review chapter. Therefore, the challenges were much larger than in the case of typical

contributed articles. But the reward, we think, is much more beneficial for the student, professor, or researcher employing this book for his or her particular interest. Readers will not only be able to find a specific topic but will find related information to complement and enhance the understanding of the topic.

We are in debt to the more than 50 reviewers (most of them are not authors in the book) who have agreed and provided graciously and unselfishly their valuable time. Some took on the responsibility of two chapters, and their efforts are rewarded with improvements of each contribution. In many cases, reviewers gave us interesting ideas that helped in the general structure of the book. A list of the reviewers is provided.

We also thank Elsevier Science and the various Publishing Editors who were in charge of our book along the period since we first proposed our idea to the final result that you are reading now. First of all to Kristien van Lunen who first believed that our proposal was realizable and then to the important contributions and patience of Jennifer Hele, and also to Pauline Riebeek, Linda Versteeg and lastly Sara Pratt. Stalin Viswanathan did an excellent job copyediting the whole book.

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Preface to the Second Edition

As we wrote this preface, we realized that exactly 10 years have passed since the time we wrote the original preface for the first edition. Three and half years ago, Elsevier—with a surprising mail by Candice Janco—invited us to look into the possibility of a second edition. Although initially the thought of getting back into all the effort that editing a book of these characteristics demands seemed an unhealthy adventure, all of us actually jumped right in with the idea. Unfortunately, as we present in the dedicatory, our good friend Mark Brinson passed away in the period between both editions. However, Chuck Hopkinson has been brave enough to come on board playing a major role in the outcome of the book.

All the comments given in the original preface are as true today as they were then. Unfortunately, many management issues and complex situations that coastal wetlands were suffering are still present today and, graver, they have become worse. Therefore, they will not be repeated here.

In this sense, to the original structure of the book, we added new chapters pointing out specifically new views of coastal wetlands management and valuation. Nevertheless, each chapter was significantly improved and updated to reflect on the new advances achieved by the wetland community in the last 10 years.

Many of the original lead authors from the first edition gladly accepted the challenge to get back to their old notes and redo them for the new edition. A few could not commit themselves to the task for various reasons. In the cases where it was possible, we found new adventurers who were willing to take the "relay baton" and write a completely new chapter on the subject.

In all cases, we must remember, authors were asked to make a thorough review on a specific subject rather than describe their own personal work. However, we relied on the outstanding capabilities and worldwide recognition each of the lead authors brought to the book, accompanied by no lesser coauthors.

Again, we could not have presented a book of this level of quality without the unselfish input of over 50 reviewers. They were essential in providing us with their expertise for those chapters in which we may not be as confident as them. A book is as good as its authors, and also it is improved by the quality of its reviewers. We cannot thank enough each and every one of them for their time and support.

Finally, again we cannot thank enough the original invitation of Candice Janco—who left us not only for another position within Elsevier almost at the beginning of the project but also in the very capable

hands, the amenability, and the good humor of Emily Joy Grace Thomson. She helped us through all the steps—even those initial failures—with quick responses and many times going out of her way to look for solutions, some almost impossible. We also want to thank the invaluable contributions by Nilesh Shah and Rajesh Manohar for his

capable and professional work in doing the copyediting of the book.

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