

ing to zonal and azonal processes on the shoreface, with contrasting examples from the Canadian and Alaskan sectors of the Beaufort Sea, a critical point being the significance of long fetches and severe storms controlling the long-term evolution of the coast. Chapter 10 on Paraglacial Coasts written by D.L. Forbes and J.P.M. Syvitski is a very well written and comprehensive discussion of the disposition of glaciogenic deposits and their role as sediment sources for the coast. Several key points are presented in this chapter including the ubiquitous role of relative sea-level changes in coastal stratigraphy, and the importance in paraglacial areas where sediment sources and supply are highly sensitive to sea-level adjustment. The authors provide interesting discussion on major erosional features of glacial origin, fjord-head and proximal basin sedimentation, open coast outwash progradation, drumlin-coast interactions and sheltered coast response to reductions in sediment supply. Chapter 11, Coastal Cliffs and Platforms by G.B. Griggs and A.S. Trenhaile is an account of coastal geomorphology and processes on tectonically active margins. The discussion presents several factors important in the fashioning of rocky coasts—wave action, chemical and salt weathering, bioerosion, expansion-contraction, mass movement, rock type, tidal variation and human activity—although the point is emphasized that only speculation can be made on the mode of development of rock coasts given the time required for coastal change. In Chapter 12, P.A. Pirazolli extends the arguments pertaining to crustal movement in the coastal zone with his chapter on Tectonic Shorelines. The main causes of vertical displacement are presented in addition to the effects of tectonics on coastal evolution. The final chapter (13) centers on Developed Coasts written by K.F. Nordstrom. The role of human activity in the evolution of developed coasts is presented by comparing pre- and post-development on a barrier type coast in New Jersey, U.S.A. An important argument is presented which suggests that some barriers may have passed a critical threshold beyond which the recovery to a more natural system is no longer an acceptable management option, a scenario that the author suggests will incorporate more and more barrier systems in the future.

On first browsing through this book I was a little skeptical that it was no more than a number of papers pulled together under the broad theme of coastal evolution and morphodynamics. I am happy to admit I was wrong. The editors have compiled a number of well-written papers in a logical order and are to be commended for their effort. On a sadder note, this was one of the last projects on which Bill Carter was to work. His sudden death in July 1993 resulted in the dedication of this book to his memory. Indeed it is a most fitting dedication because it engenders so many of the ideas and themes that Bill worked on throughout his career. Julian Orford, a long-time friend and colleague of Bill Carter, contributed a compassionate dedication which provides the reader additional insight into Bill the scientist and humanitarian. It is with great pleasure that I recommend this book highly to all interested in the coast.

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Kramer, K.J.M., 1995. **Biomonitoring of Coastal Waters and Estuaries**, Boca Raton, Florida: CRC Press, 327p., ISBN 0 8493 48951, \$89.95 (HC).

Successful implementation of any environmental monitoring program intended to detect a biological impact caused by an anthropogenic discharge is a complex undertaking which may be thought of a four step process. First the problem at hand and the purpose of the monitoring must be fully stated. Second, this leads to the selection of monitoring parameters that provide information both upon the discharge and the biological response. Third, once it has been determined what is to be measured then strict criteria must be adopted for inferring causality. Fourth, sampling designs can then be adopted and the field program implemented. Writing, an ideal, comprehensive, text for biomonitoring is probably an impossible task. Therefore, there is a strong need for books which address various components. The collection of papers edited by Kees J.M. Kramer has mixed success at describing a wide variety of biological parameters.

The greatest single strength of the collection is the breadth of topics covered in fourteen chapters by twenty nine international experts. The topics range from induced molecular systems, to whole organism response, and conclude with benthic community monitoring. To the extent which the topics allow, all chapters have a parallel structure which includes case studies, and an appendix for more technical details. All chapters are well written in English in spite of the host of native languages involved. Since the topics covered have different levels of complexity, the success of providing useful information differs chapter to chapter. Most of the chapters on induced enzymes are highly informative and comprehensive. Whole organism response chapters tend to be more limited in content. And, the two chapters on community monitoring provide only the barest glimpses of that topic.

As with many collections, the book suffers from an absence of opening and closing chapters which put the individual topics in a broader monitoring context and balance the advocacy of the chapter authors with some critical evaluation. Therefore, the value of this book as a general reference or text depends upon the expertise of the user more than its contributors. To people already informed about biomonitoring, it is an interesting review of possible biological parameters. However, to the student few teachers have the breadth of expertise needed to guide the appropriate critical evaluation of the biological parameters being advocated.

One minor annoyance is a production style which makes it surprising difficult to follow complex topics. The text neither indents nor spaces for paragraphs. The only hint the reader has of where the text breaks is the length of the closing line in a paragraph. Unless it happens to be short, the reader may have to carefully dissect out lead sentences hidden in unbroken text stretching over one or two pages.

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