“Design Waves” as well as the use of some formulae of recent date which do not consider the importance of wave periods or of resonance conditions for the stability, although their importance is adequately proved by multiple researches and demonstrated in practice in numerous cases, are shortcomings of an otherwise excellent report attempting to reach down to the roots of a probabilistic approach.

Per Bruun
Norwegian Institute of Technology
Trondheim, Norway


The revised, and 296 pages longer, second edition of Coastal Sedimentary Environments is intended for student use and to provide the “comprehensive knowledge of coastal environments...necessary for a geologist, engineer, oceanographer, or coastal manager, or for other persons involved in the coastal zone”. In this edition the chapter on Coastal Bays by R.B. Biggs has been retitled Estuaries and is now co-authored with M.M. Nichols, while J.C. Boothroyd’s Mesotidal Inlets and Estuaries has become Tidal Inlets and Tidal Deltas. There are new chapters in Intertidal Flats and Intertidal Sand Bodies by G. de V. Klein and The Shoreface by A.W. Niedoroda, D.J.P. Swift and T.S. Hopkins.

Both editing and the synthesizing of research work in a specific field are fraught with difficulties. This reviewer’s principal reservations have been largely anticipated by the editor in his Preface. These are: that the title is over-ambitious; that “The depth of treatment for each of these chapters shows some variation...” (as does the degree of revision between editions) and “Each of the chapters that covers one of the coastal environments can stand alone”. The latter results in considerable repetition, not merely in the text, but also in the diagrams. Thus Figures 2.39 and 4.12; 3.1 and 7.3; and 6.38 and 10.11 are all substantially identical pairs. The level and philosophy of approach varies widely, with the chapters on Estuaries and The Shoreface assuming far more in terms of (hydrodynamics) background than elsewhere. Compare the treatment of tides by Nichols and Biggs with that of Davis!

There are far too many misprints. Some, such as “entertainment” for “entrainment” (p. 28) are merely amusing, but proper names, at least, should have been checked: for example “Stokes” for “Stokes” (p. 100, twice); “Bridge[water Bay” (p. 269); Amophila (p. 318, twice, and p. 367); “Gibraltar,” spelled correctly one and incorrectly five times; Callianasa (p. 430); and “Nordenney” (p. 509). It is surprising to find the Thames included, along with the Amazon and the Mississippi, amongst the world’s great rivers (p. 131); or Barry Links, Scotland, as Barry, England (p. 313). Units, too, seemed to have caused problems, e.g., p. 686 where there is a river 200 m wide with a sediment supply of 50 tons a day per foot of stream width; or μm and μ (both used on p. 100). However, as in the first edition, it is the diagrams which cause the greatest problems, with levels of shading no longer adequately differentiated, or letter overreduced (e.g., Figures 2.27b, c; 2.35; 3.7; 3.8). Sometimes, in abstracting diagrams from other sources, background explanation has been omitted (e.g., Figure 1.35) or extraneous detail included (e.g., Figure 7.51).

In spite of its wide-ranging title, Coastal Sedimentary Environments is often parochial, being restricted not merely to the United States experience but to the eastern and southeastern seaboard alone. Coastal Salt Marshes draws mainly on examples from Georgia, while Tidal Inlets and Tidal Deltas has some two dozen photographs of the Park River and Essex estuary! Generalizations are often made on inadequately representative data, e.g., Davis’ conclusions regarding pebble and cobble beaches (p. 399). Terminology also causes problems, e.g., in Davis’ chapter in the use of “gravel.” We are probably, unfortunately, now stuck with the word “shoreface” in the sense used by Niedoroda et al.

To end on a more optimistic note. The chapters by Nichols and Biggs, and Niedoroda et al., which are the principal hallmarks of this edition, enable a considerable overall improvement on the initial publication. The long bibliographies are especially welcome. Yet even here there must be reservations. For example, Niedoroda et al (p. 569) seem to imply that quite minor erosion of the coast can be readily identified as accumulation on the sea floor; while their reference to Niedoroda et al. (1984, p. 540) gives the impression that they originated the concept of logarithmic velocity profiles for analyzing tidal currents. A 6-second period is quite short for ocean waves (p. 536). Do terms like “cum sole” (p. 542) or “half pendulum day” (p. 539) aid in the
In spite of the improvements in the second edition of *Coastal Sedimentary Environments*, in spite of the well-known reputations of the authors and the editor, it appears that we must continue to await a representative synthesis of coastal sedimentary environments for some time to come.

Alan Carr
Wellington
Somerset, England


This multi-authored publication, mostly in Spanish, brings together a great deal of information about the geomorphology and recent stratigraphy of the western Mediterranean coast, notably the Balearic Islands and the Valencia section of the coast of Spain. One article summarizes the sea-level history of Bermuda. The book is a *Festschrift* in honor of Juan Cuerda, a distinguished naturalist and expert on the litoral shell deposits of the late Quaternary raised beaches that have become widely publicized through the work of K.W. Butzer. Cuerda, before retirement, was an army officer, who always "found time" to guide visiting scientists (including this reviewer) to the most interesting spots along the coastline of Mallorca. To the coastal specialists this region is particularly instructive because there is an interplay between eustatic shoreline deposits and calcareous eolian accumulations that built up during regressions. Furthermore, the island is near a rifted plate boundary, the site of sea-floor spreading in the Miocene, so that some neotectonics are also present.

Rhodes W. Fairbridge
New York, New York


This book presents the "principal results of a wave model intercomparison study conducted by the Sea Wave Modelling Project (SWAMP) and first presented at a symposium on Wave Dynamics and Radio Probing of the Ocean Surface, held May 13-20, 1981, in Miami, Florida." The book is divided into two sections: the first gives the Principal Results and Conclusions of SWAMP (153p.), while the second section (94p.) contains chapters on the individual models.

Nine wave modelling groups from the United States, Japan and Europe, representing a comprehensive range of the available models, participated in SWAMP. Model intercomparison was achieved by running the models using seven hypothetical, idealised wind fields specially designed to expose the models to critical conditions. The results of each test case are presented in a separate chapter and then summarised.

Numerical wave models are routinely used to forecast ocean wave conditions or to generate wave data for areas of the globe where instrumental wave data are inadequate. Such models seek to predict the evolution of the surface wave field that would be generated by a given wind field. This is achieved by solving an energy balance equation which describes the evolution of the 2-dimensional wave spectra in terms of a net source function. The source function terms give the spectral energy transfers arising from input of wind energy, the nonlinear wave-wave interactions and dissipation. Models differ in the form assumed for the source function and the numerical methods used in integrating the spectral energy equation.

The test cases were designed to place severe conditions on the models, and as a result, strong divergences were found between the predictions of different models. "Major sources of uncertainty were found to be associated with the response to changing wind directions and the modelling of the transition region between windsea and swell. However, surprisingly large discrepancies were also found in the basic fetch- and duration-limited growth curves for a uniform wind field" (p. 20). For real wind fields the models would be expected to be in closer agreement.

The results of the tests reveal much about the differences between the models that was not previously clear. For anyone contemplating using modelling techniques or with a need to understand the workings of wave models, this book will be invaluable, as it contains a wealth of detail on the present wave models.

Third generation wave models are planned which will utilise more sophisticated methods of calculating the nonlinear transfer source function. With such developments on the horizon, the present volume provides a timely summary of the state reached by the present wave models.