

coastal governance systems work, politically, socially, environmentally and economically.

Similarly, the section which discusses the issues (Chapter 5) would have benefited from a comparative analysis between the coastal states governance and implementation system and its ability to deal with these "issues." Finally, some minor points might have improved the readability of the work. A list of the acronyms used in the text would have been particularly useful for those without extensive background in international aid work. Some of the tables appear incomplete and a few errors have crept in. The International Geophysical Union (p. 102) does not sponsor the Commission on Coastal Environments. The C.C.E. organization falls under the auspices of the International Geographical Union. Similarly, at least one citation Strickland and Cox (p. 45) was not included in the bibliography, which otherwise is most comprehensive. These are however, minor blemishes on an otherwise excellent conceptualization of the problems confronting those responsible for developing coastal zone management plans in developing countries.

Considering the growing recognition of the importance of the coastal zone in both developed and developing countries, this volume represents a very significant contribution to an otherwise sparse bibliography dealing with this topic. Some excellent ideas have been presented in a logical and most readable fashion. This volume bodes well for the Renewable Resources Information Series under which aegis Coastal Publication #1 has been published.

#### LITERATURE CITED

- ARMSTRONG, J., 1974. *Coastal Zone Management: The Process of Program Development*. Sandwich, Massachusetts: Coastal Zone Management Institute.
- MITCHELL, K.K., 1982. Coastal zone management: a comparative analysis of national programs. In: E.M. Borgese and N. Ginsburg (eds.) *Ocean Yearbook #3*. Chicago: University of Chicago Press.

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**Physical Oceanography of Coastal Shelf Seas**, edited by B. Johns, 1983, Elsevier, New York, xiv + 470p. \$US 86.50, ISBN 0-444-42153-X.

This book, number 35 in the Elsevier Ocean-

ography Series, contains ten chapters that deal with various interactions between sea-bed material and dynamic processes. Although geared for coastal engineers and sedimentologists attempting to estimate the movement of coastal and shelf sediments, others will find this volume of interest because there are discussions that relate seabed topography to ocean dynamics in shallow water. The scales of observation range from those of high-frequency gravity wave propagation over beaches up to those of tidal- and wind-induced circulations in shallow shelf seas.

Chapters 1 to 3 relate to smaller-scale dynamics associated with surface-wave propagation over beaches. Of particular interest to coastal specialists here are sections that detail wave reflection by rippled beds, wave-generated nearshore currents, littoral drift, sand transport on beaches, and turbulent flow beneath waves approaching a shoreline over a sloping beach.

Chapters 4 to 7 deal with the tidal-scale dynamics that exist farther offshore and over the adjacent shelf regions, as in the example of northwest Europe (Chapter 4). Chapter 5 specifically considers the principal features of the vertical current structure and associated turbulent properties observed in various kinds of bottom boundary layers in shelf seas. Chapters 6 and 7 present numerical models for shallow-water flow over topography and tidally-induced residual flows. The final chapters focus on the modeling of wind-induced circulation in the shallow shelf-seas of northwestern Europe.

Inasmuch as this volume is primarily concerned with the study of those processes that are dominated by the affect of seabed topography and friction, other topics normally expected to occur in a book on coastal and shelf dynamics (e.g., continental-shelf waves, storm surges, and coastal upwelling) are not considered.

This book is handsomely produced and the figures and illustrations are generally of high quality. An exception is the fold-out map on pages 143-146 which was reduced too much. Many coastal researchers will find aspects of this volume useful, but sections dealing with mathematical treatments and modeling will appeal especially to those concerned with the quantification of dynamic processes.

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