

monic constituents and harmonic analysis. The actual tides are presented in Chapter 5 "Tidal Dynamics" which deals with long wave characteristics in the real world and goes on to excellent descriptions and illustrations of tides in oceans, enclosed seas, on shelves and shelf tidal currents.

Storm surges are covered in Chapter 6 as well as seiches, tsunamis (seismic sea waves), wave set-up and surf beat. Numerical modelling and regional examples of surges are also dealt with. Chapter 7 "Shallow Water Wave Dynamics" covers the impact of shoaling, friction and topography on tides, together with residual currents, tides in rivers, bores and tidal energy budgets at local, regional and global levels.

The engineer is catered to in Chapter 8 "Tidal Engineering" which includes sections on coastal and offshore engineering and tide power generation. Mean sea-level is the title of Chapter 9 and as with tides it is well covered in terms of definition, and influences at scales from seasonal to meteorological and from secular to eustatic. The final two chapters 10 and 11 cover a tidal influence in "Geological Processes and Biology," and conclude by looking to the impact of the Greenhouse effect on mean sea-level.

Given the aims and intended audience this book is highly successful. The coverage is comprehensive including mathematical treatment of all relevant sections. The non-mathematician is covered however by asterisks marking those minority of sections which can be safely passed over, knowing a more qualitative treatment has been provided elsewhere. Throughout, the book is very clear in its definitions, and includes a glossary and an appendix of legal definitions.

In total I found this a very well produced book. The organisation and coverage is thorough, the printing, figures and tables are sharp and very readable, it is a well bound durable book. It is subtitled a 'handbook' and I am sure the intended audience of non-tidal specialists together with undergraduates and graduate students in the disciplines will find it an extremely useful introduction to, coverage of and handbook for their interest in tides. I would recommend it highly both for the classroom and reference shelves.

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Port Design, by Carl A. Thoresen, 1988. Tapir, Trondheim. 307p. US \$93.

Port Design first of all is a book on Port structures and related subjects, next a manual on planning aspects including operational conditions and less a report on environmental, hydraulic and transportational matters. As such it serves well planners and designers while subjects usually handled by laboratories, research stations, maritime and transport institutes largely are left to them. An experienced consulting port engineer is behind it. He knows what is most important for his task.

The planning and harbour chapters, one and two respectively, are concise with many tables and schematics. Chapter three deals with structures and is particularly well written, especially the "loads" topics; schematic presentations on wharf and berth structures and their main characteristics and details on tie back systems and measures against corrosion are useful. The best section is probably section 3.6, open berth structures, where the author is in his home bailiwick advising even on some constructional aspects.

Fenders are treated in chapter four. It includes a wealth of practical information including examples of calculations and descriptions of damages. Chapter five gives comprehensive information on concrete in marine structures, including underwater casting, types of deterioration and methods of repair. Figures and tables are well done but not referenced. The index is detailed with a number of multiple entries.

All in all, this is a very professional manual for the design of port and terminal structures, leaving hydraulics, breakwaters, transportation facilities, equipment and sheds to others. It deserves to be on every professional port designers shelf.

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Coastline: Britain's Threatened Heritage, by Greenpeace, 1987. Kingfisher Books, London, 200p. £14.95. ISBN 0-86272-213-6.

This book sets out to convey a strong message. The British coast is one of the most beau-

tiful and varied anywhere. Its variety of landforms, wildlife and human activities form an integral part of both its history and its present. The threat from industrial development and marine pollution is now so severe that future generations may not be able to use the coast for recreation, or for food. The heritage will have been destroyed.

Greenpeace produced this book following a survey of the British coast carried out by its survey vessel, *Beluga*, during 1986. During a research voyage from London to Penzance via the Caledonian Canal, the substances being discharged and dumped in the coastal waters were assessed and quantified, particular attention being given to the possible effects of heavy metals and persistent organic compounds. The overall findings are summarised in some 13 pages towards the end of the book. Despite the lack of data or forecasts, this is a book to read.

The coastline is presented in 14 sections, each prefaced by a photograph of an outstanding scenic location and a contribution from well-known personalities including the Poet Laureate, Ted Hughes, John Fowles and Hammond Innes. All have a personal link with the coast and express their concern for the way in which it is changing. They provide a fine anthology of popular expressions of environmental concern. The main part of each section describes its features, history and problems, accompanied by a collection of colour photographs which emphasize the message of beauty and variety. Marginal notes and sketches pinpoint important or threatened species. Each section concludes with a one-page regional summary which provides a profile of physical, human and natural features and lists causes for concern. There are also five photo-essays on such themes as food from the sea and coastal pleasures. There is one small criticism. The final map on page 195 entitled "Britain's Coast Heritage" does not include the designated Heritage Coasts and the sites marked by small circles are not shown in the key. Greenpeace has produced an attractive coffee-table description of Britain's coastal heritage.

Readers, however casual, will be left in no doubt of the beauty and variety of the British coast. The message that it is threatened pervades each section. However, the extent and intensity of the stresses upon all organisms

which inhabit or depend upon the coastal waters is not put forcibly. The authors have a difficult task, for while the beauty of the coastal landscape and its wildlife is visible the problems of its aquatic ecosystems are not visible, apart from the most obvious sewage or industrial pollution. Many of the measures which have been adopted to clean up rivers or beaches have transferred the problem elsewhere.

In summary, this book confirmed my love of the British coast, but didn't leave me feeling as uncomfortable about the threats as perhaps it should.

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Biological Surveys of Estuaries and Coasts, edited by J. M. Baker and W. J. Wolff, 1987. Cambridge University Press, Cambridge. 449p. \$40.00 (hardcover), \$15.00 (paperback). ISBNs 0-521-32407-6 (hardcover), 0-52131191-8 (paperback).

Environmental Impact Assessments (EIAs) are becoming increasingly *de rigueur* throughout the world as developments encroach on ever-shrinking natural resources. This even applies in some countries where they are not yet required by law. Consultants contracted to perform EIAs in, or on the margins of marine and estuarine systems may easily find themselves in unfamiliar surroundings, uncertain of what techniques to use even if their theoretical background is adequate.

Biological Surveys of Estuaries and Coasts has been issued by the Estuarine and Brackish-Water Sciences Association to fill this gap, while also acting as a valuable sourcebook for students, and indeed anyone wishing to undertake surveys and studies in marine and estuarine environments. The coverage is comprehensive and includes chapters on planning, remote sensing, salt marshes, biota of intertidal and subtidal sediments, processing sediment macro-