

macro-scale profile features such as bars and berms proved highly productive, both for providing more thorough and quantitative understanding of beach profile change to wave action and for promoting development of numerical models for simulating coastal processes aimed at engineering use.", is endorsed.

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Cape Cod Field Trips, by Stephen Leatherman, 1988. Coastal Publication Series, Laboratory for Coastal Research, University of Maryland, College Park, MD 20742, USA. 132p. No ISBN. \$6.00 (plus \$1.00 handling).

Steve Leatherman has stepped bravely into the shoes of Henry Thoreau, John Wilson, Barbara Chamberlain and Arthur Strahler and has written a book about Cape Cod. One can only speculate as to what cerebral and even mythical processes have operated to draw these geologists, like moths to a flame, to proselytize and extol on the natural wonders and beauty of 'America's beckoning finger.'

Steve Leatherman is well-qualified to produce this volume as he has published a number of papers about the Cape, especially on its ever-changing coastline. The forerunner of this book was the Author's "Environmental Geologic Guide" published some ten years ago. However there is a difference. While the original volume was aimed at the professional, this one is aimed unashamedly at the amateur. Its low cost format suggests this book is clearly designed to be sold with sun hats, ice creams and postcards, rather than through specialist academic book stores. With the Cape attracting around 3 million visitors a year the prospects for a good sale are high.

The book comprises two sections. The first 33 pages gives a brief, but wide ranging introduction to glacial and coastal processes (including sea-level rise and coastal ecology), plus a few lines on 'human development'. Despite the limited space, the text conveys many thoughtful and crucial points. The second section (80 pages) forms the Guide itself, providing landform interpretation for 27 sites from the Cape Cod canal to Provincetown. These interpreta-

tions are augmented by historical anecdotes, details of memorable storms and descriptions of now-vanished railroads, quarries, roadways and buildings. Everything is profusely illustrated by cartoons, photographs and sketches, sixty five in all.

It would be unfair to be too critical of this volume, as it is clearly designed to attract and hold the attention of non-geologists. In this sense I think the book succeeds admirably. Some of the explanations of landforms are a little glib and superficial, and the figures are somewhat stylised. The mix of Imperial and SI units is unfortunate. Personally I don't like the black and blue printing, it makes the photographs (all in shades of blue) look old-fashioned. But overall this is a nicely produced volume. I wish more of us took the time to explain our ideas so lucidly to the general public.

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Tides, Surges and Mean Sea-level, by David Pugh, 1987. Wiley, New York. 472p. \$110.00. ISBN 0-471-91505-X

Our knowledge of tides and particular tidal prediction has come a long way since the late 18th century when models of tidal prediction were a closely guarded family secret in England. In today's more cooperative scientific community we can all benefit from the knowledge of tidal specialists such as David Pugh, particularly with the publication of this excellent text. This book is subtitled 'a handbook for engineers and scientists.' It is aimed at the vast majority of those who deal with the coast specifically hydrographers, engineers, geologists and biologists, who while not tidal specialists require an understanding and working knowledge of tides and perhaps surges and mean sea-level.

The book contains eleven chapters. Following the Introduction, tides are treated in the following four chapters. Chapter 2 "Observation and Data Reduction" covers instruments from tide poles to satellite altimetry and drouges to remote sensing. Chapter 3 covers "Forces," while chapter 4 "Analysis and Prediction" presents a clear and lucid account of all 35 har-

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-