



Journal of Sedimentary Research

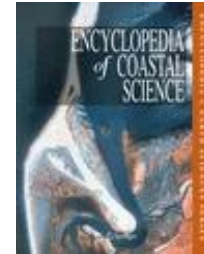
An International Journal of SEPM

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Encyclopedia of Coastal Science, edited by Maurice L. Schwartz, 2005. Springer-Verlag, Tiergartenstrasse 17, D-69121 Heidelberg, Germany. Hardcover, 1242 pp., 807 illustrations (11 in color). Price USD 440.00, EUR 428.00. ISBN 1-4020-3880-1.



The *Encyclopedia of Coastal Sciences* is an interdisciplinary and comprehensive work that brings together the geomorphology, ecology, civil engineering, oceanographic, and anthropogenic aspects of coastal sciences into one single volume. The book is compiled by 245 specialists in their field, guaranteeing that all information presented in the book is up-to-date. The contributions are well-illustrated by figures and photographs.

The encyclopedia focuses on the abiotic and socio-economic aspects of the coastal zone, while the biotic aspects are limited to biogeomorphology and ecology. Over 350 pages are reserved for geomorphologic descriptions ranging from small scales (e.g. spits, tidal flats) up to coastal types (e.g. karst coasts, deltas). All coastal types, from wave-dominated to muddy coast types—but also less common ones such as asteroid-impact coasts and desert coasts—are treated. In general, these descriptions provide a sound introduction to the subject, with sufficient references for those requiring more details.

Coastal processes are described in another 200 pages, and contain surprisingly detailed information. They include the most obvious—waves and tides—but also less common ones such as isostasy, vorticity and the Beaufort wind-force scale. Tides are treated from their generation by the earth/moon system up to the resulting coastline features and measuring techniques. Similarly, waves are dealt with from the small-scale hydrodynamics (although with some overlap) including, for instance, wave refraction and wave/current interaction, up to the resulting morphodynamics. Numerical and analytical modeling of coastal processes and features are alternately included in the topical description, or otherwise included in a separate section.

In addition to the thematic description of the world's coastlines mentioned above, the ecology and geomorphology of the world's coastlines are also described in a regional context, covering everything from the Asian coasts to the Atlantic Ocean islands and the Black and Caspian Seas. These sections provide an overview of the geology, morphology, coastal processes, vegetation, and human pressure throughout the world, in approx. 200 condensed pages.

Compared to the large attention that is given to geomorphology, the sections on engineering applications seem somewhat short, covering less than 100 pages. They include dredging, shore-protection structures, and artificial islands. Measuring and monitoring techniques such as airborne laser, dating, and vibrocores are presented with considerable detail, using over 100 pages in total. One of the interesting parts of the book is that it does not stop with the abiotic descriptions, but also includes socio-economic sections such as coastal-zone management, tourism, life saving, and vulnerability analyses; the most remarkable subject in the book is possibly 'Coastal Warfare'. In addition to the alphabetically organized entries, there are also a number of appendices including conversion tables (between English and metric units), journals, organizations, databases, a 40-page glossary, and topic categories.

The strength of the book obviously is its completeness. The book covers almost everything from waves and tidal hydrodynamics up to large-scale geomorphology and socio-economic problems of the coastal zone. The only missing subject probably is marine biology, but including this might triple the size of the book. The encyclopedia is a pleasure to read and very informative. The style and information provided on most subjects make the book most suitable for professionals (engineers and managers), students, and for academics who want to broaden their horizon beyond their own research field (which is, of course, recommended given the increasing emphasis on multidisciplinary research). However, also people outside the professional coastal community may find some interesting things in here. The book belongs in every coastal-engineering company and academic library, but may also be suitable for some public libraries.

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