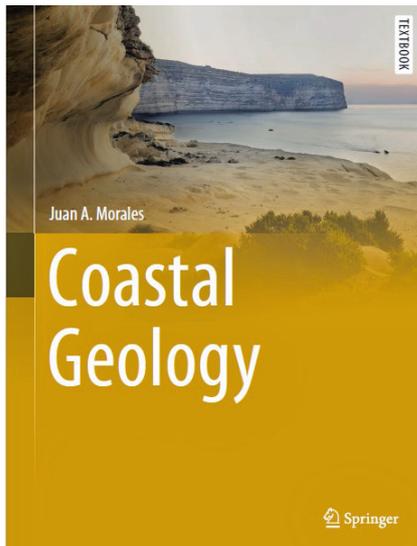


Book reviews

Coastal geology, by Juan A. Morales, 2022. Springer International Publishing, 455 pages. eBook price: 96,29 EUR, ISBN 978-3-030-96120-6.



Coastal zone geology may appear to be no more than a marginal field of study, but nothing could be further from the truth! Given the density of coastal dwellings and the constant pressure on these, it is clear that this branch of the natural sciences is of great importance; in fact, it is to be hoped that, in the near future, it will gain in importance. For this reason, the present tome may prove to be interesting reading, also in non-academic circles. Several facts support this view, as will be outlined below.

Through his professional experience, the author guarantees the quality of the contents of this book. Dr Morales, educated at Seville University, has been employed as a professor at Huelva University for over twenty years. He headed the coastal geology research team between 1998 and 2016 and managed in excess of twenty projects related to coastal dynamics. Through his work, he has made significant contributions to the development of the study of the dynamics of estuarine systems along the Huelva coast and in the Bay of Cadiz. In addition, he authored numerous books, chapters in monographs, scientific articles and a range of national and international conference contributions.

The present book is divided into six parts, each grouping several related topics. Individual parts are devoted to information related to various aspects of coasts. There are chapters that are purely geological in content, as well as those that focus on the application of geology in relation to other disciplines.

The first part includes reflections on changes in our perception of coastal zones over time, basic definitions, a description of factors influencing the coastal zone, a classification of coastal types and a description of research methods used in coastal zone studies. In the reviewer's opinion, these definitions are of the greatest value, being presented in a clear and informative manner.

Part II is dedicated to analyses of coastal processes. The author focuses here on purely physical processes such as wave and tidal action, but also discusses sedimentological factors and terrestrial processes that have an impact on coastal shapes, while the next section discusses phenomena and marine processes. Other processes described are of a purely chemical or biological nature. A strong point here is the attempt to describe the interplay of the various phenomena and their interrelationships within the context of coastal evolution.

Part III focuses on describing the different coastal zone systems as controlled by geological and geomorphological conditions, being dominated by wave, tidal and wind regimes; it also lists the different facies models of coastal environments. This section is very comprehensive and probably deals with the most complex issues related to coastal zones. The text layout is consistent in describing first the processes that shape any given system, then its morphological and geological features and, finally, a discussion of its facies.

Part IV examines processes that take place on a geological time scale, to which the author assigns, among other things, climate change and sea level changes caused by eustatic and tectonic factors. This section also includes information on 'palaeo-oceanography' and a description of the fossil record of coastal zones.

Part V discusses the problems that arise from human pressure on coasts, as well as, in a synthetic fashion, geohazards in coastal zones related to the increase of investments here. This section concludes with a discussion of how to deal with the issues raised here, inclusive of a description and discussion of the concept named "Integrated Coastal Zone Management".

Finally, Part VI considers future challenges that face coastal zone research.

Undoubtedly, a great advantage of this publication is its structure, describing all issues covered 'from the general to the specific', which makes it much easier to read. Yet, perhaps the greatest plus is the graphic/illustrative aspect. Many of the issues discussed are illustrated in colourful illustrations and photographs, which occasionally are of higher value than text portions. The reviewer has

been particularly impressed by the juxtaposition of diagrams/ideograms with photographs of the actual situation.

Summing up, this tome can be characterised as a comprehensive guide to coastal geology in that it compiles results of studies of many geological elements and coastal processes, including morphogenesis, stratigraphy, depositional systems, etc. Over the past decades, numerous monographs on coastal studies have been published, but the present tome may be seen as a particularly valuable addition in this field.

*Grzegorz Uścińowicz
Polish Geological Institute – National Research Institute,
Marine Geology Branch, Gdańsk, Poland
e-mail: grzegorz.uscinowicz@pgi.gov.pl*