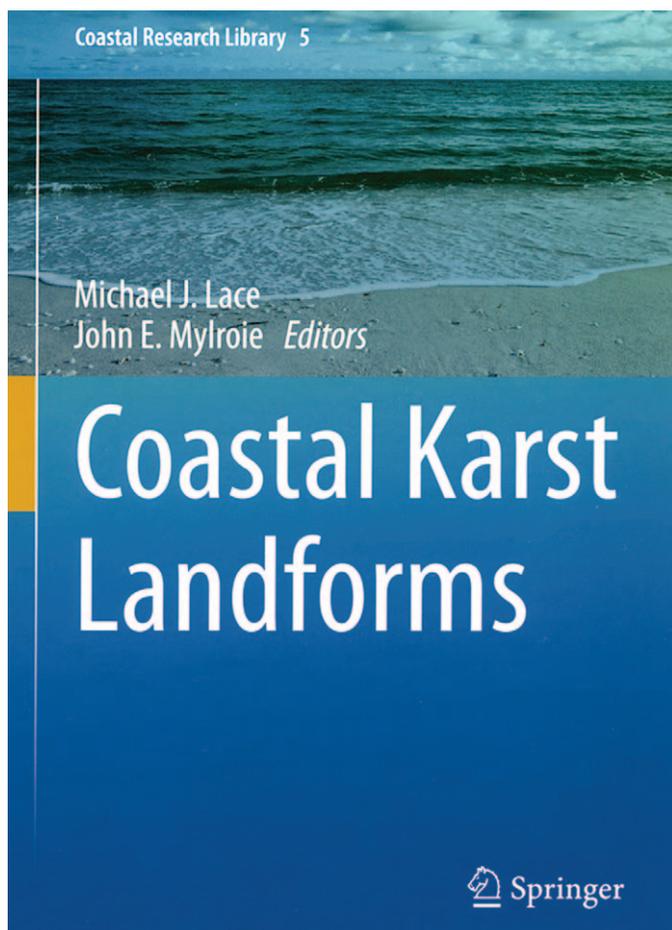


## BOOK REVIEW



### Coastal Karst Landforms

Michael J. Lace and John E. Mylroie (eds.), 2013. Coastal Research Library, vol. 5, Springer, Dordrecht, The Netherlands, 429 p. ISBN 978-94-007-5015-9, \$129 (hardcover, 7.2 × 10.2 inches), \$99 (eBook – PDF format).

This book is part of a series on coastal research written for geoscientists and land managers, but which will also appeal to non-technical cavers. Most of the twenty-one authors are from the group of American scientists and cartographers coordinated by John and Joan Mylroie of Mississippi State University. This book is a summary of their work on island karst over the past thirty years. Other contributors include specialists in various fields or geographic areas. Each chapter has separate authorship, and although they vary in depth and style, they are well integrated. The result is the most accessible coverage of this topic and is an important addition to the karst literature.

The book gives a positive impression, with its clear layout, striking color photos, well-drafted illustrations, and glossary. It includes two parts: principles of coastal karst development, and selected case studies. Topics in the first section include pseudokarst caves, erosional and depositional features, hydrology and geochemistry, coastal karst development in carbonate rocks, biology and archeology, and karst resources management. The chapter on coastal karst development is perhaps the focal point of the section, as it lays out the various models of cave origin devised by the team. This includes the well-known Carbonate Island Karst Model, which associates various karst styles with the local geologic setting. Coverage of biology is brief. It could have expanded to include the occurrence of guano, which on several islands has spawned an important industry, and microorganisms, which play important roles in redox reactions.

Part 2 describes specific examples of coastal karst that have been much cited as type examples. With its detailed cave descriptions, this section will be of interest to non-technical cavers. These chapters include the Bahama Islands, Puerto Rico and its outlying islands, Barbados, Mallorca, the Mariana Islands, sea caves along the western U.S. coast, Florida, and the Yucatan Peninsula. On large islands such as Puerto Rico, the coverage of karst is limited to coastal features, since the great amount of strictly meteoric karst lies outside the scope of the book. In areas where there is a genetic relationship between coastal karst and inland features, the coverage includes both. Especially relevant to karst researchers is the revelation that in Mallorca and the Yucatan Peninsula the typical spongework pattern of coastal caves is related to poorly cemented, young limestones and is not specific to saltwater-freshwater mixing. A chapter on coastal karst in telogenetic limestones is interesting. While other chapters make distinctions between true karst and pseudokarst, this chapter gives examples of voids formed in indurated limestone that mimic the shapes of flank-margin caves.

Limits on space and time were apparent in some chapters. Coverage of coastal caves in Australia has a narrow focus, as it covers mainly a few caves visited by the authors. An overview of the coastal karst research by authors such as the late Joe Jennings would have been a good addition. There is no mention of caves in the huge Nullarbor Plateau, many of which open to the ocean and are thought to represent relict sea-level stands. Those interested in the mixing-zone model might wish for a chapter on chemical field data that support the solutional models. It also would have been instructive to include an overview of the significance of coastal karst in interpreting past sea-level stands and their relationship to other sea-level indicators.

This book is a fine addition to the karst literature. It covers a topic that had received only sparse coverage before this group of authors began their long-term focus on coastal and island karst. Its details are largely geomorphic and descriptive, which makes it attractive to a wide

readership, but it includes enough concepts and detailed site analyses to make it of technical value as well.

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