



BOOK REVIEWS

Coping with Beach Erosion. Cambers, G., 1998. UNESCO Publishing.

This text is the first of a number of 'Coastal Management Sourcebooks' produced by the CSI (Environment and Development in Coastal Regions and Small Islands) of UNESCO. The series aims to serve as a source of information, ideas and practical tools for environmentally sound management in coastal and small island areas. The book has a direct practical focus (it avoids philosophical discussion) and is aimed directly at property owners and prospective owners of coastal land mainly in the Caribbean area. The book comprises three sections: 1. a series of case studies with practical responses; 2. a guide for prospective investors; and 3. a section suggesting actions for protecting beaches.

The book has an overt focus on practical responses to beach erosion problems as they face property owners. As such it provides guidance to owners on how they might protect their property. This theme is very much dominant over any potential subordinate theme of beach management, sustainability, or environmental soundness. Eleven cases (themes) are presented in the form of a discussion of the environmental background explaining why specific erosion-related problems occur followed by practical responses as to how to cope with them. These cases include:

- countering the effects of high seas in winter;
- when a hurricane occurs;
- when stones have replaced sand;
- assessing the impact of coastal structures;
- adding more sand to the beach;
- when sand has been mined from the beach;
- when sand dunes have been destroyed;
- when vegetation has been removed;
- stabilizing the river mouth or tidal inlet;
- conserving reefs; and
- new ways to reduce beach erosion.

In each instance, practical guidance is given to property owners as to how they might respond to a similar problem to those reported in the cases. The advice is frequently sound and includes (on the social front) the need to consult with neighbours, to ascertain the legal situation regarding actions, to acquire permits. Similarly, from a coastal geomorphology perspective the book provides sound advice for example, not to build adjacent to river mouths or inlets, not to mine sand from river-mouth bars and not to damage coral reefs. The book is evidently written based on experience and pulls no punches—even going to the extent of alerting would-informers on the potential dangers of reporting illegal sand mining to the authorities given its position as a lucrative trade.

The book takes a largely persuasive approach in, for example, encouraging property owners—'you may wish to con-

sider setting further back from the beach than initially planned.' This seems to indicate the lack of practical planning controls—a fact that is further indicated by the mention of suggested setback lines.

Practical responses are direct and specific and will be direct use to Caribbean coastal landowners in the field of property protection. They include, for example, the need to build a paper trail (for potential litigation) when a neighbour's sea defences interfere with adjacent property, the unfortunate (for property owners) fact that beaches in many Caribbean countries are publicly owned, and the advice to involve the media to help produce leverage when coastal erosion problems occur. The responses focus very heavily on property protection and reads mainly as an aid to the development of Caribbean coastlines for recreational/residential development. Real estate companies could use it selectively to improve sales. The property-owner/property protection theme that runs through the guide may sit somewhat uncomfortably with the coastal geologist or environmental scientist, however, the book has its objective as a guide on coping with beach erosion. In this regard it succeeds in producing a manual for property owners to make good investment decisions and to preserve their property.

I was left with the strong impression that this book is so practically orientated that aspects related to the environmental soundness of many of the approaches are minimised. For example, the impacts on the nearshore of dredging sand for beach nourishment is considered only from its ecological impacts on sensitive environments. Changes in the nearshore profile with consequent implications for wave modification is not presented as an area of concern. Similarly, the ethical issues e.g. calling in the media to aid in disputes about the effects of sea defence structures, are not discussed.

In the section on 'countering the effects of high seas in winter,' which describes the seasonal erosion of beaches followed by summer accretion, I was surprised to read a lengthy section on revetments, bulkheads, sea walls and groyne—this after the implicit indication that the section deals with *seasonal* beach changes. On second reading, however, one realises that the section does consider progressive coastal erosion under the same heading. Such ambiguity in the hands of a layperson could be counterproductive—all too often we see unnecessary 'coastal protection' works being emplaced after winter storms when there is no immediate danger to life or property. Equally, (on p47) the reader is encouraged to act before erosion continues to the point where it becomes an emergency. This could easily result in unnecessary rock armouring if erosion is the result of a seasonal storm and could hinder any potential post-storm recovery. The options of retreat are not addressed openly, and the design of buildings to cope with erosion is only dealt with under the section 'when sand dunes have been destroyed.'

Section 2. 'What to look for when investing in coastal land or property' is a guide for purchasers and gives practical advice on selecting a site and involves the use of a vulnerability index which the layman can use to assess risk of specific sites. The vulnerability index compiles information on site elevation, landform type, wave exposure, time since last hurricane etc to rate the vulnerability of a site. It is logical, easy to use for the layman, and is designed to aid decision-making when purchasing a site.

Section 3 is an addition in which practical steps are outlined by which residents and visitors can improve the quality of beaches. These include many environmentally friendly activities such as beach clean-ups, adopt-a-beach, participating in environmental education initiatives etc. Given the rest of the books preoccupation with defending property and the rights of property owners this sits somewhat uncomfortably with the rest of the book.

One cannot help but wonder whether, as is the possibility with such practical guides, that property owners, potential purchasers and developers on reading this book will be selective in their use of the information and will transform beaches into seawall-lined promenades fronted by open water, beach remnants or artificially nourished beaches. The message of the book could be interpreted as 'erosion is a problem but it can be avoided if you buy the right property and if not, we can fight it.' The consequences of rock-armouring are skimmed over without adequate attention to the implications for beaches—the lay reader will not readily ascertain that rock armouring may transform a beachfront property into a seafront property. The soft engineering approaches are portrayed in a poor light (nourishment excepted) and the statement (p.84) that 'you get what you pay for' in coastal defence is only likely to promote ever more heavy engineering 'solutions' to erosion.

As a guide to property owners this text provides a ready reference on means to help protect and develop one's land. It is not a general coastal (or beach) management guide, nor does it set out to be. If its aim is to promote development of the littoral fringe in the Caribbean islands, it will undoubtedly help developers assess the risk and likely costs of sea defences. In reviewing this book one must constantly be aware of the legal background as it relates to planning and environmental management and it is stated that many island states give the right to protect ones land to property owners. Faced with this overarching control, the book offers practical steps for coastal property owners. In so doing it highlights a need for small islands to embrace the concepts of managed retreat in future policy initiatives. With the current legal situation, the advice provided here could unwittingly promote the transformation of Caribbean beaches into rock-armour-lined coasts where property owners 'cope with beach erosion' but where the environment deteriorates as a result. On the other hand, it may dissuade buyers from purchasing coastal plots in erosion-prone zones and in that regard permit the coast to fluctuate free of human interference.

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Holocene Land—Ocean Interaction and Environmental Change around the North Sea. Shennan, I. & Andrews, J.E. 2000. Geological Society, London, Special Publications 166. 336p., 180 illustrations.

This book is based on the findings of the UK Natural Environment Research Council funded LOEPS (Land-Ocean Evolution Perspective Study) research project. The blurb on the back cover states that the book is split into four sections: techniques; Humber catchment; other areas within the studied region; regional scale analysis. These divisions are not highlighted in the contents page or inside the main text of the book. Not that it is really a problem, allowing the entire contents to be displayed on one page.

In the first chapter Shennan and Andrews explain the history of the project and the layout of the book. I will not go through each of the fifteen chapters in detail, rather just highlight some points of interest. The 'techniques' section starts with the chapter by Ridgeway *et al* (14 authors in total) who looks at the techniques used in the interpretation and analysis of the sedimentary sequences in the Humber Estuary. This is a good idea as it saves each of the individual chapters having to go into their methods in details, instead referring to this chapter. It cuts out repetition and improves the readability of the book. It also provides a very useful chapter for other researchers to refer to if they are interested in sediment analysis techniques. Their table 1 spans four pages, and is an impressively useful and comprehensive account of the techniques highlighted in the chapter. The techniques are listed horizontally with entries under the following for each technique: Technique, Purpose, Methodology, Output, Interpretation, Benefits, Constraints and References. I found this particularly useful. Hoerton *et al* present a chapter on the implications of a microfossil-based transfer function in Holocene sea-level studies. Baliff and Tooley look at luminescence dating of fine-grained Holocene coastal sediments. Clarke and Rendell give a very good overview of what luminescence dating is, and how it works. They then present their new methodology for dating Holocene sediments from the land-ocean interface.

'Humber Catchment' section includes a range of chapters, but predominantly on the estuary itself. Macklin *et al* present a fascinating paper on environmental change in the Ouse basin, and its influence on river dynamics and sediment fluxes into the Humber Estuary. I read this with interest, as York is currently in the thick of the November 2000 River Ouse flooding. Rees *et al* consider sediment storage and provenance in the Humber Estuary. Andrews *et al* produce a storage inventory of organic carbon and sulphur in the Humber Estuary over the Holocene. Comparisons with modern values allowed the impacts of development (e.g. landclaim) over the past three centuries to be assessed. The colour in diagrams 11 & 12 add value, as black and white would probably have resulted in a bit of a clutter. This chapter concluded by highlighting potential implications for the future management of the Estuary.

Plater *et al* start off the section on 'other areas' with their chapter on sediment provenance and flux in the Tees Estuary. Orford *et al* highlight the importance of coastal dunes as