

necticut, USA, 516p. \$US39.50, ISBN 0-87055-427-1.

The seventeen authors of this volume have presented, in varying detail, a review of the status of aquaculture in 31 countries covering North America, Europe, Australia and Asia. Latin America and Africa are not included. The book describes existing aquafarming practices and the authors in some countries have also covered details on the farm economics including marketing and distributional channels. The book covers more than 100 species of finfish and 13 species of shrimp/prawns and crayfish. Most major aquaculture systems such as ponds, raceways, cages, pens and their application in different local conditions are also included.

The title suggests a global coverage of fish cultivation. Hence, the omission of Latin America and Africa, although explained in the preface, is hardly justified, especially as countries such as Papua New Guinea, Sweden and Belgium/Luxemburg are included and in view of relatively rapid increases in aquaculture production output in Latin America. Whilst the second edition is certainly an apparent improvement in terms of coverage and scope, the exclusion of countries such as India, Bangladesh and Sri Lanka as well as Malaysia is a serious omission. Latest statistics indicate that India contributed no less than 0.8 million metric tons of finfish through aquaculture or approximately 8.3% of world total aquaculture output. The production from village ponds plays a very important role in fish protein supply in rural areas in Bangladesh. Although total output from Malaysian aquaculture is small, Malaysia's traditional and modern industrial scale aquafarming deserves inclusion in this volume.

The title of the book has also given an impression that it covers all aquatic living commodities as the term "fish" in fisheries usually covers all commercially important aquatic living organisms. The inclusion of mollusc and seaweed culture in this volume would have been useful to the readers who are interested in having a broad orientation of world aquaculture. Seaweed cultivation has contributed to more than 23% and mollusc culture 32% of world aquaculture production in 1983. Their importance in contributing to the world economy cannot be underestimated.

The 31 countries selected inevitably leads to heavy emphasis on the culture of salmon and trout. The culture of these two species in Europe, North America and even in Asia is very similar. However,

cultivation of Chinese and Indian major carp, which figures largely in total world finfish production and also is an important source of protein for the rural poor, should receive equal if not heavier emphasis. High-priced commodities which are popularly cultivated in Asia include the seabass (*Lates calcarifer*), grouper (*Epinephelus spp.*) and snapper (*Lutjanus spp.*), which, unfortunately, are not included in the book. The importance of *Tilapia* in polyculture systems in China and their contribution to culture-based open water fisheries in man-made lakes and reservoirs in Sri Lanka is also deserving of inclusion.

Despite the above omissions and exclusions, the book provides a very general picture of world main aquaculture activities for finfish and their economic contribution to national development and certainly provides a worthwhile record of aquaculture development in these 31 countries.

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Coastline Changes: A Global Review, by Eric C.F. Bird, 1985, John Wiley (Interscience), Chichester, 219p. ISBN 0-471-90649-8.

This is a country-by-country summary of observed 20th Century coastal changes, erosion or accretion, around the world. It is not an alphabetic, but sequential arrangement, as on a world map, starting at the top-left with Alaska and finishing with Antarctica. Eric Bird is chairman of the International Geographical Union's Commission on the Coastal Environment, and this work is the product of a decade-long process of observation and collection. The results are descriptive and difficult to quantify, but the generally upward trend of mean sea level in the present century seems to confirm the Bruun Rule that the equilibrium coastal form (of unconsolidated material) is shifting upward and somewhat landward — to the dismay of riparian residents and investors.

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Living With Long Island's South Shore, by L.R. McCormick, O.H. Pilkey, Jr., W.J. Neal, and O.H.

Pilkey, Sr., 1984, Duke University Press, Durham, North Carolina, 157 p. \$US9.95 (paper), ISBN 0-8223-0501-1, ISBN 0-8223-0502-X (pbk.).

This is the fourth book (after North Carolina, South Carolina, and Texas) in the Pilkey/Neal series which will cover the U.S. coastal and Great Lakes states. The books are inexpensive and written for the layperson with the intent of communicating both general information on coastal processes affecting erosion and site-specific hazard assessments to allow for reasonable and informed decisions regarding public and private property management.

The series has a common format: a brief perspective on the regional history and problems of coastal development as well as a simplified discussion of shore dynamics using local examples, thence a negative review of coastal engineering projects giving local examples of diverse attempts to deal with shoreline retreat, guidelines for coastal hazard evaluation, followed by a detailed site discussion of the state's oceanside shore. This is accompanied by simple maps of the coastal environments and a tripartite classification of the development risk. The fifth chapter discusses the pertinent regulations for coastal land use in that state. The concluding chapter is repeated throughout the series and deals with home purchasing or construction near the beach — including structural guidelines, design requirements, improvements, and other selection criteria. All books have valuable appendices covering hurricane checklists, agencies involved in local coastal development, useful references, and field trip guides for the amateur geomorphologist. Each book has a local scientist as lead author to provide the detailed analyses. Dr. Larry McCormick's book on the south shore of Long Island, New York is a most eloquent review and should be read by anyone interested in the setting.

Reviewing such a book for a scientific journal presents certain problems in that these books are not written for scientists and, as seems to be the all-too-frequent case today, do not provide a neutral basis for environmental hazard assessment and mitigation. One could also quibble about the simplistic and sometimes ill-applied models, despite the target audience. The data bases vary tremendously in both spatial and temporal coverage from state to state and one is never made aware of what the limitations in the shoreline change data are. Lastly, identification of the relative importance of the numerous causes of the changes is never made. I

would have preferred that each state would have undertaken a systematic and thorough analysis of the causes and magnitudes of threats to its coast and then provided a summary for public consumption rather than these uneven treatments of shoreline change.

This book is not immune to any of these problems. Chapter one includes a cavalier reference to a "20 to 30 foot surge" for which there is no record in this locale and either value would be catastrophic for these barriers. There is no discussion of various historical trends in storms and shoreline change, nor of the local importance of the east-west shoreline orientation which is rare along the Atlantic coast of the U.S. The claim is made that rising sea level is the root of erosion problems but there is no clear elucidation as to why or how much more important rising sea level is than storms. The spectre of the greenhouse effect is invoked as the cause. Shoreline dynamics are simply treated and the "rollover" conceptualization of barrier dynamics is highlighted even though it is of limited importance in the maintenance of most Long Island barriers. Inlets are essentially ignored even though they have played an enormous role in local barrier island preservation; their stabilization must have profound geomorphic and ecologic effects in the future. Aeolian processes and dune dynamics are ignored although the relationship of dune height and overwash potential is basic to much of the analysis. Chapter 3 does not treat the problem of the shoreline oversteepening due to shoreline stabilization but, importantly, it does mention the need for beach nourishment over the full profile not just the upper beach. Nonstructural responses to erosion are presented, if briefly.

As with all of the other books, the site-specific risk assessment chapter appears to be excellent but one is not provided with the spatial and temporal variability in the data (let alone the raw data) or the limitations of the data. Risk assignment is not discussed, it appears personal and arbitrary. Unfortunately the detailed analysis stops at Fire Island Inlet so the western, most developed, half of the shore is ignored but for a very brief history and a few photos. Requirements for flood insurance and various permits are clearly stated although important details of the state's Coastal Zone Management Plan were not finalized at the time of publication. The construction chapter is informative but one should use it only as a guide in consulting with a local and reputable builder. The appendices are important and useful for Long Island residents.

It is most unfortunate that publication was scheduled prior to the release of a final report on a massive geomorphological study of the south shore of Long Island; use of its findings would have greatly aided the audience. Despite the lack of scientific rigor in the information presented, I find these books to be a more valuable introduction to shoreline change and local problems for the various states than the now outdated summaries in the Corps of Engineers' National Shoreline Study of 1971. Nevertheless, they should only be regarded as guidebooks and are neither the most accurate statements about site-specific shoreline risks nor are they going to be the last word on the hazards.

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Living With the Louisiana Shore, by J.T. Kelley, A.R. Kelley, O.H. Pilkey, Jr., and A.A. Clark, 1984, Duke University Press, Durham, North Carolina, 164p. \$US9.95, ISBN 0-8223-0519-4.

Living With the Texas Shore, by R.A. Morton, O.H. Pilkey, Jr., O.H. Pilkey, Sr., and W.J. Neal, 1984, Duke University Press, Durham, North Carolina, 190p. \$US9.95, ISBN 0-8223-0500-3.

These two books are part of a series of publications on regional coastlines of the USA. The words "Living with" in the title indicate the purpose of the books and more that half the content of each book relates to such issues as beach protection, selecting a site for homes at the shoreline, the National Flood Insurance Program and the law. The books also provide appendices on hurricanes and a check list of federal, state and local agencies involved in coastal development. These practical matters are set in the context of excellent summaries of the coastal environments of the areas covered by each book. There are numerous photographs, diagrams and maps. Ecological and geomorphological factors pertaining to the nature and evolution of these shorelines are discussed in a clear, concise and informative manner, and, as such, provide succinct, up-to-date detailed descriptions of these coastlines.

The flavor of each book might be obtained by selecting a typical site analysis map (most of the coastline is covered by a series of these maps at various scales) as follows: Galveston Island — this map shows existing roads, buildings and coastline

constructions; it classifies the coastal terrain into five categories *e.g.* marsh, beach, dunes, etc.; the coastal zone is classified into hazard zones *e.g.* dangerous, safe, etc.; washover channels and historical impact sites of hurricanes are identified at sections of the coastline and analyzed in relation to problems of locating a building there *e.g.* "this area has a seawall which provides good overwash protection from most storms." The books, which are both less than 200 pages long and in small format, are thus a mine of coastal information and the authors have been assiduous in compiling basic shoreline data.

The Louisiana and Texas books have the same chapter headings, format and approximate number of photographs, maps and diagrams. The main difference derives from basic coastal physiography and related land use; the Texas coast is a beach and barrier island coastline with some areas of considerable development, the Louisiana coastline has similar elements but is subsiding, contains the Mississippi deltaic environment and has little or no housing or recreational development along most of its length. These are both excellent additions to the series — well written, informative and an ideal source for someone wanting either basic knowledge of these shorelines or, if a resident in these areas, a sound practical guide to "living with the shore."

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L'Erosion des Côtes, by Roland Paskoff, 1981, Presses Universitaires de France (Series: Que sais-je?), Paris, 127 p. ISBN-1-12-036747X.

For the English-speaking person who would like a relatively painless introduction to the French language sweetened by a topic of genuine interest and embellished by neat thumb-nail sketches, this is a very economical starting point. It is in a university-level paperback series that goes back — believe it or not — more than 100 years. It has only four chapters: the agents of erosion, rocky coasts, coasts of unconsolidated materials, and the battle against erosion. Although clearly intended for the beginner the book takes up important principles