
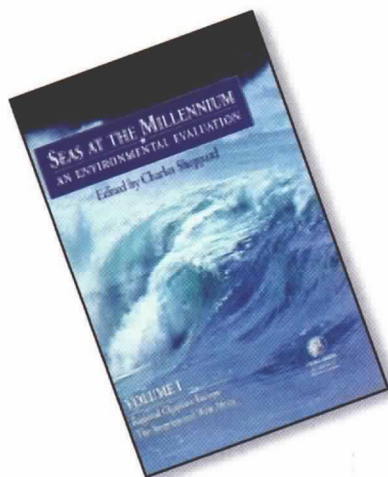


they all now have to be examined within the context of the large-scale human influences on the global environment. So far the need to do this in terms of the potential anthropogenic effects on the climate system has been recognized internationally but the implications for the future of the global environment of direct impacts of humans on ecosystems, both terrestrial and marine, remains a much more difficult topic for research. This situation reflects complex socio-economic and political sensitivities with which natural scientists are generally not well equipped to deal.

This book rightly does not attempt to address this last issue. However, it seems a pity that no synthesis was included of modern understanding of the dynamics of the Earth and its environment as a system that has allowed life to evolve and sustain itself over geological time. Earth system science has much to learn from paleontology and, if paleontologists wish to promote the concept that 'knowledge of the past is the key to the future', then a much greater knowledge will be needed about how global biogeochemical cycles operated in the past and how they were affected by events such as major volcanic activity, bolide impacts and changes in ocean circulation. This comment aside, the book makes very enjoyable reading especially for the non-geologist who will learn much about the recent history of our globe that is highly relevant to evaluating the potential impacts of anthropogenic global change. 



Seas at the Millennium: An Environmental Evaluation

Edited by Charles Sheppard
Pergamon Press of Elsevier Science
ISBN 0-08-043207-7, 3 Vols., Approx. 2400 pages

Review by David A. Brooks
Texas A&M University, College Station, Texas USA

This massive collection of interdisciplinary review articles about the coastal oceans is offered as a reference source for "researchers and policy makers with an interest in the marine environmental sciences, oceanography and marine engineering." In sheer bulk the work is unsurpassed, the three volumes comprising 2352 pages and weighing in at 44 kg. The first two volumes contain 106 review chapters covering selected coastal, shelf and marginal seas in the Atlantic, Indian and Pacific Oceans. Polar regions are not considered, a major omission. Volume three adds 29 review chapters on diverse cross-cutting themes such as coral reefs, seabirds, marine antifoulants, and tidal energy. According to the publisher's promotional material, individual chapters are authored by "international experts and scientists working in the field."

The overwhelming (and audacious) scope of such a collection defies even a partial reading, so I have taken a few "core" samples as representative of the whole, an approach subject to the usual hazards of undersampling. From the first volume I chose three chapters describing areas familiar to me and from the second volume three chapters covering less-familiar regions, supposing that satisfaction with the former would lend credence to the latter. From the last volume I selected three chapters on topics of general interest. Readers should note that this set comprises only about 6% of the total number of chapters and judge accordingly. Also in the spirit of full disclosure it should be noted that the reviewer's primary bias is physical oceanography.

All the selected articles provide a broad interdisciplinary introduction to the biogeochemical aspects of the region reviewed, with a wide focus on sustainability issues. Topics include physical, biological and chemical descriptions of the ocean, estuarine and bay ecosystems; the nearshore coastal zone and its built infrastructure; the influence of burgeoning coastal populations and resulting pollution and impacts on habitats; status and trends of fisheries; and species diversity. The sweeping scope is appropriate for a reference work intended to give thumbnail overviews of the environment, but the predictable result even in such a massive undertaking is a rather thin and uneven spread.

I found the chapters dealing with familiar regions to be severely dated. In some cases important work from the last few decades has been completely overlooked or omitted. Lack of currency can be expected in large, multi-author volumes, but the staleness here seems excessive. I was struck by the preponderance of technical reports and other "gray" literature in bibliographic citations, and by the lack of references to well-known authors who have long been actively working in the regions reviewed. Consequently these chapters provide a general overview useful in the same way that an encyclopedia might introduce a casual reader to a topic. For students and others with a more serious interest in the state of the science, there are better and much more current sources of information available, as a topical search on the Internet quickly will reveal.

A jaundiced perspective notwithstanding, I can report that the chapters describing less familiar regions and cross-cutting themes provided basic overviews that were informative, interesting and useful. In fairness, the same conclusion likely would be reached by most readers curious about a part of the world ocean little known to them. For this reason, the books probably are worthy of space on the sturdy reference shelves of libraries able to justify the astounding \$915.50 cost, but a more useful investment would be a current list of websites and relevant publications. ☐

Books Undergoing Review:

Ocean, Ice and Atmosphere: Interactions
at the Antarctic Continental Margin

Edited by Stanley Jacobs and Ray Weiss
American Geophysical Union

NOAA Dive Manual
Best Publishing Company

Coastal and Estuarine
Fine Sediment Processes

Edited by W.H. McAnally and A.J. Mehta Elsevier

Climate Change:
A Multidisciplinary Approach

By William James
Cambridge University Press

Physical Principles of Remote Sensing

By W.G. Rees
Cambridge University Press

Manuscript Solicitation:

A new section entitled *Breaking Waves* will be appearing in issues of *Oceanography* beginning in 2002. The purpose of this new section is to provide an outlet for short papers describing novel approaches to multi-disciplinary problems in oceanography. These provocative papers will present findings that are synthetic by design, and have the potential to move the field of oceanography forward or in new directions. Papers should be written in a style that is both concise and accessible to a broad readership. While these papers should be thought-provoking for the professional oceanographer, they should also be written in a manner that is engaging for the educated non-professional. As in other sections of *Oceanography*, we encourage the use of color photographs and figures to help illustrate a paper's main points and add to its aesthetic appeal. Consistent with our effort to publish papers on rapidly advancing topics in oceanography, all submissions to the *Breaking Waves* section will be given a special fast-track in the peer-review and publishing process. Our goal will be to publish papers no more than two issues (i.e. six months) after their submission. The Associate Editor overseeing the development of *Breaking Waves* is Charles H. Greene (chg2@cornell.edu), Department of Earth and Atmospheric Sciences, Cornell University. Authors should submit a brief e-mail message to the Associate Editor outlining their ideas for papers prior to actual manuscript preparation. This step will insure that authors receive appropriate feedback prior to investing their time and energy in preparing manuscripts that may be unsuitable for publication in this forum. Correspondence with the Associate Editor and submission of manuscripts should be done electronically whenever possible. File formats for text, figures, and photographs must be consistent with existing style guidelines for *Oceanography*.