

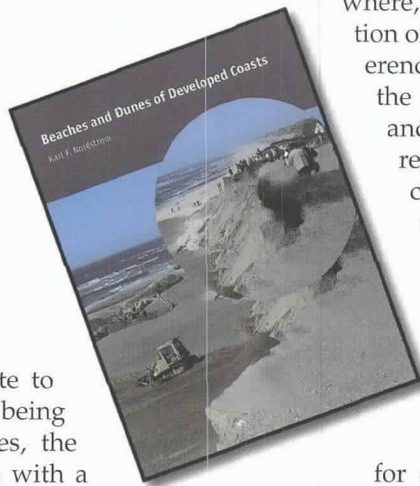
Beaches and Dunes of Developed Coasts

Karl F. Nordstrom
338 pages.
Cambridge University Press
ISBN: 0-521-47013-7

Review by Gary B. Griggs
University of California,
Santa Cruz, California USA

As more and more people migrate to the world's coasts, their impacts are being increasingly felt. In many countries, the majority of the population now live within a few tens of kilometers of the coastline and as a result, the pressure on the coasts are being intensified. This book is a very clearly written and descriptive treatment of how and to what extent human activities have altered coastal landforms and processes. It details the many ways beaches and dunes are eliminated, altered, and replaced and the differences between natural landforms and the human artifacts that replace them. While there are many examples of human impacts that are easily recognizable to us all, Karl Nordstrom's treatment of these varying impacts is very thorough and systematic and also includes a myriad of activities that are not commonly appreciated or recognized. Activities treated include elimination of landforms, stabilization and destabilization, sand mining and nourishment, construction of every type imaginable (from boardwalks to breakwaters), waste disposal, military activities, channel alterations, sand supply reduction and disruption.

Although many individual examples given are from the sandy barrier island Atlantic coast environment, there are a wide variety of geographic examples used from Europe, Japan, Australia, New Zealand and else-



where, which provides for broad use and application of the book. This is also a good historical reference in that it includes discussion of some of the oldest recorded coastline alteration efforts and also a number of very recent reports and references and is thus very up to date and comprehensive. The author has done an exceptional job of researching and referencing the book with over 700 references cited.

Although modification of the coastal environment and human impacts on the shoreline is a topic today of considerable attention and difference of opinion (retreat, nourishment or armor, for example) the author focuses primarily on coastal landforms, how they have been modified and the temporal and spatial scale of those modifications, rather than making a personal or value judgment on whether these are good or bad. This is a very objective treatment of the variety of ways in which humans have altered the coastline with an emphasis on the importance of retaining naturally functioning beaches and dunes in ways that achieve natural values while accommodating development and use. The book is written from the viewpoint of a coastal geomorphologist and as such is very descriptive rather than quantitative. It can easily be understood by a wide variety of readers, whether scientists or coastal planners. I think the most significant limitation of the book is its general lack of photographic examples of the many coastal landform modifications that are so completely discussed in the text. There are only 34 photographs in a book of 286 pages and several chapters have no photographs at all. Perhaps the book's greatest value is stimulating the reader to think carefully about the vast and somewhat unrealized scope of human activities, both along the shore as well as onshore and offshore that have altered coastal landforms and processes globally.

Books Received for Review:

* Biotic Response to Global Change: The Last 145 Million Years,
Edited by Stephen J. Culver and Peter F. Lawson,
Cambridge University Press

* Charles Darwin's Zoology Notes and Specimen Lists from H.M.S. Beagle,
Edited by Richard Keynes,
Cambridge University Press

Scientific Diving Techniques, A Practical Guide for the Research Diver

John N. Heine

225 pages. Best Publishing Company

ISBN: 0-941-33269-1

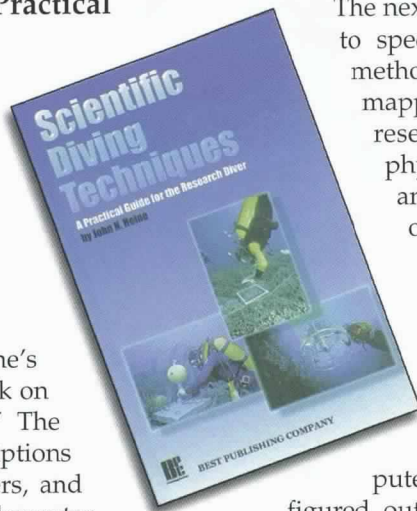
Review by Alice Alldredge

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The key word in the title of John Heine's thorough and extensively referenced book on scientific diving techniques is "practical." The book is not only packed with clear descriptions of the huge variety of methods, samplers, and instruments developed by underwater researchers over the last half century but also provides extensive citations to the scientific literature describing each technique and specific contact information for manufacturers and suppliers of everything from underwater transect tapes, epoxy, and pneumatic drills to diver-held fluorometers. Heine, himself a veteran researcher and dive officer at Moss Landing Marine Lab for 20 years, has produced a treasure house of information for novice and experienced scientific divers alike.

The book begins with a brief description of the history of scientific diving and of the role of the American Academy of Underwater Sciences (AAUS), the nationally recognized scientific diving organization through which the scientific diving community maintains high standards of safety and diving reciprocity. It then summarizes the variety of aquatic habitats in which scientific divers work including everything from reefs and rivers to offshore platforms, caves, and the open sea. The third chapter describes specific underwater diving equipment, including Nitrox and rebreathers. It particularly focuses on the special equipment needed in severe conditions including very cold, turbid, dark, caustic, or polluted waters. In some cases Heine makes specific recommendations for types and even brands of equipment known to operate reliably under extreme conditions and cites studies documenting his recommendations.



The next three chapters of the book are devoted to specific techniques. Chapter 4 describes methods of underwater location, marking, and mapping. Chapter 5 presents the underwater research techniques used by geologists, physical oceanographers, and archeologists and Chapter 6 focuses on measurements of biotic factors and processes. I found myself absolutely fascinated by the versatility, ingenuity and cleverness of scientific divers. They have invented devices to measure the shear strength of sediments, generated seismic waves with spear guns, mapped sunken ships with underwater computers, performed surgery underwater, and

figured out how to attach temperature probes to wild dolphins. Perusing the literally hundreds of techniques Heine describes and thoroughly references, including new high tech instruments being developed for diver use, actually gave me a number of new ideas for my own underwater research.

The final chapter is devoted to underwater photography and video. It references protocols for making video transects and photographs for quantitative assessment. Many color photographs of instruments, equipment, and divers working underwater illustrate techniques throughout the book. The book is also enhanced by brief outlines of suggested training exercises aimed at familiarizing scientific diving certification classes with underwater scientific techniques.

Although laudably comprehensive, a few helpful topics are missing including a discussion of high altitude diving and tips for scientific divers asked to untangle lines from ship propellers or search for and recover lost equipment. The book would also be enhanced by the addition of an index although each chapter is divided into clearly labeled subsections. Overall this is a well organized, clearly written, engrossing, and above all "practical" guide for scientific diving techniques sure to provide a valuable reference source and stimulate the research creativity of even the most experienced underwater scientist.

Books Undergoing Review:

*El Niño and the Southern Oscillation,
Edited by Henry F. Diaz and Vera Markgraf, Cambridge University Press

* Ice in the Ocean, by Peter Wadhams, Gordon and Breach Publishers

* Seas at the Millennium, Edited by Charles Sheppard, Elsevier Science

* Under Southern Seas, Edited by Neil Andrew, Krieger Publishing Company