

zones along this coast!). Selection of a site is gauged in specific terms of: stay away from inlets; build behind a dune, failing that, build a dune; go for the widest beach possible; watch for tap water quality and sewage disposal problems; avoid finger canal locations which are great for boat berthing, but on a micro-tidal barrier could be transformed into a tidal pass by the next major storm; and finally check out your nearest (often the only) evacuation / escape route off the barrier for when the next storm comes. It most surely will! Chapter 5 covers the State and Federal legislation which can affect construction and occupancy. Be assured, more legislation is yet to come! Chapter 6 recognises that as people will still want to build at a shoreline position they might as well learn how to minimise the risks by means of sound construction methods, for example, pole construction, and tying and bracing techniques. Finally four appendices give information on; (A) essential equipment and things to do in case of hurricanes, (B) a guide to federal, state and local agencies involved in coastal development, (C) references cited and (D) possible field trips. While I can recommend (D), I have no wish to experience the vicissitudes of hurricanes in order to give a personal recommendation on (A).

I have only one caveat as such. My concern is the strange nature of the book size. This book should have been of pocket size, in order to be manageable in the field. Its irritating size (9.25" x 6") means that it will never fit into a pocket nor onto a standard bookshelf, though that might be a marketing ploy in that if the book is never on a shelf it must be lying around on a table, one step nearer to the next casual reader.

All in all, after reading about the pitfalls and problems of New Jersey coastal locations from this volume, one would probably sink one's savings into more stable terrestrial environments elsewhere! If only a few more people do so, after reading this volume, then in a way its success would be more assured than by all the citations coastal specialists could give it.

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Ecological Impacts of the Oil Industry, edited by Brian Dicks, 1989. John Wiley and Sons, London, 316p, £80.00 ISBN 0-471-92193-9.

Before we start, let us narrow down the subject matter of this book. It is not about 'Ecological Impacts of the Oil Industry' but about 'Ecological Impacts of the Oil Industry in the Marine Environment.' Further, it is centered on one organisation, the Oil Pollution Research Unit (OPRU) of the British Field Studies Council. Indeed, it is essentially a celebration of 20 years work by the OPRU into the environmental consequences of marine oil spills. The Unit was formed just before the wreck of the *Torrey Canyon* in 1967, and since then regular accidental spillages of oil have provided almost continuous interest and funding. Clearly, objectives have changed, moving on from clean-up tactics to broad based impact assessments and general contingency planning. Much of the funding for OPRU has come from oil companies and tanker owners and it is interesting to note that several of the Unit's staff have gone from 'poacher to gamekeeper,' transferring to oil company environmental groups.

The book covers a series of papers (each self-contained from Abstract to References) covering the range of OPRU activities from experimental studies with dispersants, to surveys and sensitivity mapping. The approach is mainly ecological, although sedimentology is considered and geomorphology merits a few lines. A little more on the physical environment might have been welcome, especially to demonstrate applicability of the ecological procedures. Most of the Authors are OPRU employees or ex-employees, and the basic feedstock of their papers is the huge resource of unpublished reports compiled over the years. This in itself is useful, because access to this material is not always possible, and even if it is, then it is not easy for non-participants to extract the essential information readily. Also the cross-correlation of material is much easier in this format.

When the OPRU started it faced many problems, not least the general paucity of baseline information with which to compare oil damaged areas and to monitor progress towards recovery. Baseline data mean consistent survey techniques, and although some research had been conducted, the OPRU had to 'write the manual'

on survey procedures, especially for rocky shores. Little and Hiscock describe the difficulties in establishing an acceptable monitoring routine, and the practicalities (and implicitly, tedium) of conducting statistically-valid repeat surveys.

The early widespread advocacy of dispersants as a panacea for oil spills (especially by the chemical industry) is addressed in several contributions, but most notably those by Howard, Baker and Hiscock and Little and Baker. OPRU had to devise field and laboratory experiments to examine the efficacy of dispersants, which, as it transpires, are not universally appropriate, as they often lead to accumulations within the sediment, rather than on the surface. What becomes very clear, in several chapters (especially that by Howells, Dodd and Turner) is that almost every type of oil, and even different fractions, behave differently, and thus, at least in theory, lead to a spectrum of impacts depending on community structure, environmental constraints and species type.

The OPRU has worked far and wide, but its most renowned studies have been in Milford Haven in South Wales, Sullom Voe in Shetland, (both major oil transshipment sites) and in the North Sea around oil rigs. Many of the case studies deal with these areas, and perhaps it is here that the generally unobtrusive editing could have been a little sharper. Milford Haven, in particular, is the subject of numerous maps, although it is page 38 (after two maps of the site) before we actually see where it is, even then on a rather bleak map of England and Wales. (Many of the figures could have been reduced, saving space, while others, clearly lifted out of context, could have done with far more explanation.)

Yet, overall this is an interesting and valuable book. It details a corpus of research not widely available before, and in so doing, chronicles a success story in applied coastal and marine research. The book also 'works' at another, perhaps more prosaic level, in that it provides some useful teaching material, particularly from the clear presentation and tabulation of raw data. There is a wealth of knowledge in some chapters, and it is probable that many undergraduate projects may start from here. The volume price is too high. Presumably this reflects oil industry-pricing standards, but at £0.25 (c.\$0.40) a page it promotes a strong

incitement to use a photocopier, especially as there are virtually no half-tones. In short a good book, well presented but poorly priced for academic purposes. Based on this standard the OPRU should have no trouble making the next 20 years, given a little help from wayward tanker captains!

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Ecology of Mangroves Patricia Hutchings and Peter Saenger, 1987. University of Queensland Press, Queensland, Australia, 388p. Aus. \$39.95. ISBN 0-7022-2015-9.

This paperback edition forms another title in the Australian Ecology Series edited by Harold Heatwole. The authors bring together expertise in both animal and plant ecology. Dr. Patricia Hutchings is an animal ecologist interested in; the taxonomy and ecology of polychete worms, the fauna of mangroves and seagrass beds, and the conservation of wetlands. Dr. Peter Saenger is a plant scientist with particular interests in the ecology of mangrove communities. Together, they have made a competent team in writing this book. The book contains 9 chapters that constitute major aspects of the ecology of mangroves. The main object of the book is to synthesize information on the flora and fauna of Australian Mangrove species. They not only present material on the work done by them in Australia but review relevant literature on mangroves from other areas of the world.

In Chapter 1 the authors give mangrove biogeographic regions with emphasis on the distribution of major mangrove species in Australia. It is interesting to learn why the mangroves and associated species occur only on the northern and northeastern coastlines of Australia. Chapter 2 deals with basic data on adaptations of mangroves to cope with high salt concentrations, to conserve desalinated water within their tissues, to overcome problems of water logging, low oxygen content and semi-fluid substrate, and to tolerate other physical factors such as light, wind, waves and frost. The authors present diagrams of leaf sections, micrographs of leaf hairs and scales and morphology of root types. The last part of this chap-