

Review

Estuarine ecology

J. W. Day, C. A. S. Hall, W. M. Kemp and A. Yanez-Arancibia
1989. Wiley Interscience. 358 pp. \$67.20.

Estuarine Ecology has been written by four North American scientists synthesizing work undertaken predominantly in North America. This should not be viewed in any way as a weakness or criticism of their endeavour. On the contrary, it ensures that the authors have written from a position of strength to produce a textbook which will be of value wherever estuarine ecosystems are studied by either students or established research scientists.

The book opens with a general introduction to estuarine systems, taking a travelogue approach to three type specimen North American estuaries: North River, Massachusetts, a relatively simple open river marshland estuary; Battaria Bay, Louisiana, a semi-tropical mangrove system; and Laguna de Terminos, Mexico, an extensive lagoon protected by a sand-bar/reef system. Subsequently, there are five sections dealing, in more conventional prose style, with physical conditions, primary production, the fate of reduced carbon, estuarine consumers and, ultimately, human activities.

The first section gives an overview of the physical characteristics which make estuaries different, while the second concentrates on production. In particular, the differences are examined in temperate zone marshland and tropical mangrove swamp production.

During the 1960s and 1970s it was *de rigueur* to

describe any ecosystem in terms of carbon flow, but possibly less so in recent years. This can be seen by the strong representation of citations from that era at the end of section four. Personally, I have always found reducing ecosystem biology to nothing more than grams of carbon very dull, but the opening review of the important part played by micro-organisms in estuarine ecology is both fascinating and readable.

As with the book as a whole, the reviews of the range of consumers, planktonic, benthic, nektonic and terrestrial (birds and mammals), are both thorough and extensive without being novel. Only in the concluding paragraphs of each of the final three chapters (the role of wildlife; fisheries; human impact) do the authors stray from this strict format and express personal views. They draw attention to: the undeniable fact that public interest in "wildlife" can be used as a vehicle to highlight broader environmental problems; the fish yield per unit of fossil fuel energy expended has been declining for at least 40 years, a factor which they believe should be included in the ecosystems approach to fisheries management; human habitation tends to concentrate around the World's estuaries. While these estuaries are getting cleaner in the industrialized world they are continuing to deteriorate in the developing world – leaving "much for the reader of this book to do".

Stephen J. Lockwood
MAFF Fisheries Laboratory
Benarth Road
Conwy, Gwynedd LL32 8UB, Wales