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Book review

Global Coastal Change, Ivan Valiela (Ed.), (2006), Blackwell Publishing, ISBN: 1 4051 3685 5 (paperback), US 89.95, 368 pages

Ecologists are frequently viewed as if they are a love child of Jeremiah and Cassandra, on the one hand telling tales of almost biblical proportions of the demise or doom of natural ecosystems and on the other not being believed by much of society. Predictions, however, are quite different from charting changes to natural ecosystems based on hard data and robust interpretations. In his book *Global Coastal Change (GCC)*, Ivan Valiela gives us a pretty good overview of the status of many coastal ecosystems, the important processes that affect them, and many of the historical changes that have led to the current state.

The book is not written as a jeremiad, but it can have that effect on any reader who leans towards lamentation of the loss of a more pristine state. Valiela, however, does not write as a sentimentalist, but rather as one who recognises the intimate interactions between human societies and natural ecosystems, offering a bit of a roadmap for how coastal ecosystems have arrived at their current state and a dispassionate assessment of future changes. In doing so, he has provided a timely review of impacts to coastal ecosystems that both describes changes and also offers ways to “set priorities for management or restoration of the impending or already present changes”. This book appears to be first cab off the rank in this important category of multi-disciplinary assessment and deserves recognition for its wide range of coverage.

GCC is dense with facts, figures, tables and illustrations which tell narrative stories with three broad aims: to make the case that humans are involved in hastening change, to provide a general review of the “background, principles, evidence, effects, consequences, and possible remediation” relating to change, and to provide more technical details and references via footnotes. The book is divided into 14 chapters that include a general introduction and a summary, and individual chapters on large issues and impacts,

including atmospheric-driven changes, sea level rise, alteration of freshwater discharges, sediment transport, loss of habitat, effects of hydrocarbons and metals, invasive species, harvest and eutrophication. A case history is given in each chapter that illustrates the problems, effects, and time trajectories of changes. The book itself is in A4 format, with a glossy flexible card cover and glossy pages. In appearance, therefore, it looks to be a compendium of scientific papers; this should suit the reading experience and training of the researchers, students, professional managers and decision-makers at which it is aimed. The prose is more that of a scientist than a popular writer. The writing, while effective, does not always flow effortlessly. The occasional clunky prose and cumbersome phraseology (e.g., the fundamental importance of fishing “to the economy of the coastal areas of northeast North America is vouchsafed...”) can be seen as individualistic and quaint when taken in the wider context of the book, which is generally written with clarity.

There is much to like about this book. The historical perspective gives a good indication of what coastal ecosystems once looked like and the processes that have led to change. The reference lists are extensive. It is good to see such a thorough use of the literature from far back to relatively recent, although there are few past 2001. The breadth of coverage is impressive, although this occasionally leads to less depth in some sections. I liked the historical photographs, summary graphs, use of text boxes to explain sidelights, and the footnotes, which were unobtrusive to the flow of text and provided more scholarly depth.

Ecologists are critical folk, however, and there is certainly scope for niggles. Many of the photos were blurred, as if produced from poor resolution scans. Some were mostly indecipherable (e.g., Fig. 11.16 showing dredge effects that were not at all apparent). I would have liked to see better labelling on many figures, particularly where finer geographic knowledge was required in maps, such as eastern Europe. And people in Sydney, Australia might be surprised to learn that their beaches have around 104 million items of plastic debris

86 per square metre (p 325, Table 13.1). These are a matter
87 more of production quality, however, than of the
88 narrative itself. Some may take umbrage at the depth
89 of coverage of some areas. For example, overfishing is
90 discussed with little mention of quota management
91 systems as management tools in coastal waters. I
92 presume that most readers would be familiar with the
93 story of cod (from the wonderful book by Mark
94 Kurlansky), which is repeated at length here. Others
95 would probably like to argue the case that preference for
96 local rather than invasive exotic species is not just
97 “ecological nativism” and a “value judgment that may
98 be difficult to argue (why are Asian clams somehow less
99 worthy than soft-shell clams? Why is smooth cordgrass
100 less desirable than rough cordgrass)”. Many ecologists
101 would view these as more than rhetorical questions,
102 including most in my local scientific community (New
103 Zealand) who go to considerable efforts to keep exotics
104 out and see them as far less desirable than our native
105 species. It can therefore be viewed as both a strength and
106 a weakness of the book, depending on your perspective,
107 that the author has taken a stand on many issues, while
108 presenting more sides than one. I liked this aspect of the
109 book because it is provocative in places.

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The case histories in this book, almost all from North 110
America and Europe, encapsulate the great issues of 111
today in coastal science. Not by any means are all 112
coastal areas ruined or greatly impacted, but the types of 113
influences and processes presented here (if not always 114
their scale) are of importance everywhere. Ecologists 115
love to cite tales of impending ruin when facing tough 116
competition for funding and, unfortunately, those have 117
ever-more resonance as changes are increasingly 118
obvious to all. If such voices are heard more, then the 119
onus is on all of us to produce more robust data for better 120
predictions and sounder management. GCC is a good 121
starting point for those wanting a wide-ranging 122
compendium of impacts on coastal ecosystems and is 123
likely to serve as a fundamental reference. It is a good 124
selection for libraries, teachers and environmental 125
managers. 126

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Q1