

GLOBAL COASTAL CHANGE

Valiela, I. 2006. Malden, MA: Blackwell Publishing. viii + 368 pp. with 185 figures, maps and black-and-white photos, and 44 tables. Soft cover. ISBN 1405136855. US\$90. €65.

Today, the effects of climate change are discussed every day and by almost everyone. Whether the event or phenomenon observed has anything to do with climate change, we see the effects of a global temperature rise in almost everything. The Preface of *Global Coastal Change* starts with “All environments on the earth’s surface have always been in flux, and so they are today.” One could add “And so they should.”

For we humans, however, these fluxes are fine for as long as our properties remain untouched. Human populations are concentrated within the most favourable environmental conditions, often near the seacoast or in delta areas, usually with pleasant weather and excellent conditions for our crops. With the climate now forecast, these conditions are under pressure, and some of us may fairly soon find ourselves in a very different environment. Whether that environment will be much drier than before or a fair bit more watery depends on the area you’re in!

An increase in violent weather and a persistent rise in sea level will affect our coastal environments in many ways. For me, a lowlander with a house situated at 1 m below sea level on an island with massive dikes all around to keep the water out, such changes may have considerable consequences in the near future. The great thing about this book, apart from its readability, is that it clearly shows that dramatic changes have occurred through the centuries, around the world. We’ve learned to cope with them, even though it sometimes took a couple of generations and even if the changes sometimes caused shock and death. This emphasis on coping is not to downplay any of the dramatic predictions of climatologists, but rather to present an optimistic view concerning what we cannot precisely oversee. We have dealt and will deal with coming changes, somehow.

Global Coastal Change provides a comprehensive overview of the environmental factors changing the marine systems of the world. Indeed, these factors include much more than “just” climate. Humans are very often to blame for what has changed, however, in one way or another! In 14 chapters, readers are guided through a landscape of changes and impacts. Chapter one presents a global context, with a dramatic variety of environmental changes in the Black Sea over the past 12 000 years as a case study. Chapter two introduces atmospheric-driven changes, with coral bleaching as a case study. Climate warming is addressed in this chapter, and among the miscellaneous observations that suggest effects of warming are events as far apart as the phenology of the spring frog chorus in New York, the thinning of ice sheets and the northward spread of warm-water zooplankton species in the North Sea. Chapter three deals with sea-level rise. I know, I’d better move from where I live. Chapter four discusses the alteration of freshwater discharges, and the Aral Sea is prominent among the examples given. A logical follow-on, chapter five deals with alteration of sediment transport along the coast, and it is not difficult to see how freshwater discharge and sediment transport are interrelated. Chapter six, the loss of coastal habitats, is not so much on issues related to rising sea level, but rather on how humanity has modified certain habitats to suit our needs. The ruining of salt marshes and mangrove forests is an important topic. I feel a bit forgotten, for

in my country, Netherlands (arguably just a coastal plain), not one stone (or one heap of sand—or clay rather) remained unturned after humans turned up. Not a single bit is left untouched or unmodified in this part of the world!

Perhaps rather unexpected is chapter seven on petroleum hydrocarbons, but it starts a series of chapters on pollutants. The case history is the Exxon Valdez accident in 1989, and here the general text is incomplete, not well referenced, and often outdated. Would a reader want to know oiling rates among stranded North Sea birds for 1967–1973 (derived from some textbook) in a 2006 book? Chlorinated hydrocarbons are addressed in chapter eight, heavily biased to the New World. How could one **not** consider the effects of these in the 1960s in the North Sea? The metals—their sources, retention and (biologic) effects—discussed in chapter nine, are the final account of environmental pollutants in this book. Eutrophication is postponed to chapter 12, with the reader first having to deal with the introduction of exotic species [whether introduced on purpose or by accident (chapter 10)] and fisheries effects (chapter 11). Most examples are again drawn from the northwest Atlantic (American east coast), as if not very much has been going on in the rest of the world. The same is true for the relatively lengthy chapter on eutrophication, and in that chapter, it is really irritating. For a “comprehensive overview ... changing the marine systems of the world,” one would expect a global view, not a handful of phenomena measured along the northeast coast of North America! In chapter 13, the leftovers—such as dumping of debris; pathogens; and thermal, sound and radioactive pollution—are briefly touched upon.

An interesting table appears in the final chapter, summing up what was presented before. Here are relative assessments on a scale of 1–5 (5 being the worst case) of the intensity, potential for recovery and forecast prognosis of the effects of the various agents at global spatial scales. With seven issues scored, a maximum of 35 points represents the worst of the worst. It will surprise few readers that the top three are loss of habitats (29 points), eutrophication (29 points) and fisheries (26 points). It may amuse (or outrage) you to learn that, in the Netherlands, serious governmental plans are in place to deliberately “eutrophicate” (by adding phosphate) our completely modified coastal waters (habitat loss) to enhance our commercial fisheries. Maybe I should change nationality. Oh yes, we are dead against nuclear energy because of the nuclear waste (7 points).

This book is reviewed for a journal on marine ornithology. Is it worth US\$90 or €65 for a seabirder? I think not, for the topics are not of specific interest and are never discussed in sufficient depth. Further, the case histories not always well chosen, and they are seldom directly relevant to seabirds. Or perhaps everything is relevant to seabirds (a coastal environment is addressed), but little new information and few insights are to be gained here, except for undergraduates interested in marine environmental science. Professionals and graduates should already know most of it, probably even better.

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