

BOOK REVIEWS

doi:10.1017/S037689290700392X

Global Warming. Understanding the Forecast

BY DAVID ARCHER

vii + 194 pp., 24.5 × 17 × 1 cm, ISBN 978 1 4051 4039 3
paperback, GB£ 24.99, Oxford, UK: Blackwell Publishing Ltd,
2006

This is a wonderful book. Between the covers of a surprisingly slim paperback, David Archer has distilled nearly everything a concerned undergraduate student could wish to know about the workings of the climate system. The book assumes nothing in the way of mathematical or scientific background knowledge and is written in a jaunty, hip tone that I believe appeals to the denizens of large undergraduate lecture halls at American universities. Given these rather daunting constraints, the author has done a magnificent job of describing much of the fundamental chemistry and physics governing the climate system.

This said, the book is not really about either 'Global Warming' or 'Understanding the Forecast.' Predictions of anthropogenic climate warming, and associated climate change are not introduced in any detail until the penultimate chapter. In the author's own words, the book is about 'understanding the ropes and pulleys of the natural world, a fundamental scientific foundation that will serve the student...'. Thus, the first 12 chapters ponder questions like: Why is Earth's atmosphere so different from those on Venus and Mars and how does this impact the relative planetary climates? Why does it get colder at higher altitudes? Where is all the carbon stored on Earth and how does it move between reservoirs? Why are there ice ages? This emphasis on understanding fundamentals separates the book from some excellent competitors on the market (such as Houghton 1997) that provide far more detail on forecasts, but treat the predictions more like a black box that the student is implicitly expected to simply trust. Students will be well served by Archer's insightful analogies (often involving bath tubs) and by his clear explanation of the fundamentals. The biggest weakness of the book is probably also its biggest strength: the author stays focused on the global system. Regional details like monsoons, let alone factors influencing their timing, strength or predictability, though obviously of paramount importance to much of humanity, are not mentioned. The El Niño oscillation does get a very brief mention, though the figure and accompanying text confusingly contradict each other regarding which phase is El Niño and which is La Niña (the figure is correct).

The language in this book is probably best described as really cool. For the most part this achieves the goal of connecting the target undergraduate audience with the admittedly complex ideas being covered. Archer is clearly a master of translating scientific jargon into language and concepts that students can easily remember and understand. For example we learn that the biosphere 'rusts' because 'Oxygen is a very greedy element... Hydrogen, in contrast, is relatively generous with its single electron.' The single word sentence 'Kablooy', used to describe the dynamics of ice sheet collapse is certainly memorable, and reminds me of Calvin and Hobbes. I do not even want to guess the origin of the perplexing 'when the sun ain't shining, the wind often be blowing' to explain the benefit

of investing in both wind and solar power as alternatives to fossil fuels.

Overall, this book perfectly hits its target audience. The chapters are full of fundamental thinking and keen insights into the workings of the Earth system, carefully packaged to pique the interest of even the most jaded undergraduate. The short chapters conclude with an excellent and concise set of 'take home messages' for minimalists as well as a thought provoking set of 'projects' and suggested further reading for the enterprising student. If I were teaching an introductory undergraduate course on climate, I would use this book.

Reference

Houghton, J.T. (1997) *Global Warming the Complete Briefing*.
Cambridge, UK: Cambridge University Press.

KEITH ALVERSON

Intergovernmental Oceanographic Commission of UNESCO
1 rue Miollis
75732 Paris cedex 15
France
e-mail: k.alverson@unesco.org

doi:10.1017/S0376892907003931

Corridor Ecology: The Science and Practice of Linking Landscapes for Biodiversity Conservation

BY JODI A. HILTY, WILLIAM Z. LIDICKER JR AND ADINA M. MERENLENDER

xix + 323 pp., 50 figs, 23 × 15 × 2 cm, ISBN 1 55963 096 5
paperback, US\$ 30.00, Washington, DC, USA: Island Press, 2006

Corridors, with their many forms and labels, have become one of the most popular ideas in modern conservation. The theoretical support behind them is clear, even if the empirical evidence for or against is still rather sparse. Regardless of the evidence, rare is the conservation newsletter that does not propose corridors as the solution to conservation problems. Making those corridors real on the ground though is a difficult problem, one for which there is no universal solution.

Corridor Ecology attempts to pull together the science of corridors into a practical guide. The authors lay out the reasons for connectivity loss in the world, largely the loss of natural habitat and fragmentation of the landscape. They then summarize the ecological theory supporting corridors as a solution. The theories of island biogeography and metapopulations are the main drivers, with many caveats having been added to them over the years. More recently, the theories of landscape ecology have come to encompass much of corridor design.

The second section of the book then addresses the reasons why corridors in the broadest sense are a potential solution. This is quite a challenge when the term 'corridor' encompasses everything from tunnels under a small road to entire mountain ranges. Importantly, the authors make clear the need to define the target species and scale of a corridor. This is refreshing, as a lack of clear objectives can sometimes inhibit effective actions toward making the corridor real. Chapters 5 and 6 then get into the details of what makes a corridor work, or not work, biologically.

The 'Potential pitfalls...' chapter is noteworthy, for it provides a check of what corridors can and cannot do. These limitations seem all too often to be glossed over in conservation. Corridors are not a panacea. They are a great planning and vision tool, but just as difficult as any other conservation action. Local situations probably drive them more than elegant theories or empirical results. The authors seem aware of this and have no illusion that there is a single method for success.

Throughout, the book is full of details and examples to illustrate corridor concepts and results. These include specific examples of where they seem to be working, and where they have not. A particularly memorable example was of black bears following corridors into a town, where they then stayed and began eating trash. Certainly not the intended result, although it does show that wildlife indeed followed the corridor. At times, I wanted a little more depth of exploration of the examples, even at the expense of fewer examples. Nevertheless, there are always references that the reader can go to for more details.

Corridor efforts around the world vary in their use of rigorous science. I imagine that most readers have run into 'corridor projects' with no science at all, as well as theoretical projects that are all science but impractical; solutions lie between these extremes. *Corridor Ecology* is full of examples illustrating specific aspects of science in action. It is a noteworthy contribution to the field and will be a handy reference to have on the bookshelf.

CLINTON JENKINS

Nicholas School of the Environment and Earth Sciences

Duke University

Box 90328, LSRC A201

Durham NC 27708, USA

e-mail: clinton.jenkins@duke.edu

doi:10.1017/S0376892907003943

Logjam: Deforestation and the Crisis of Global Governance

BY DAVID HUMPHREYS

xxv + 302 pp., 24 × 16 × 3 cm, ISBN 1 84407 301 7 hardback, GB£ 29.99, London, UK/Sterling, VA, USA: Earthscan, 2006

This is a timely and troubling indictment of international environmental institutions. David Humphreys' book explores the international forest regime in the period 1995–2006. To do this, it identifies key institutions, processes and policies, analyses the repeated failure of the UN forest bodies, namely the Intergovernmental Panel on Forests, the Intergovernmental Forum on Forests and the United Nations Forum on Forests (UNFF), to avert deforestation and facilitate sustainable forest management, and locates these failures within a broader crisis of global governance. Deforestation, Humphreys argues, is both a symptom and the result of a crisis of public accountability.

Of UNFF, Humphreys is justifiably critical, stating that it has '...completely failed as a guiding body that provides leadership and direction to other forest-related institutions'. In fact, a smorgasbord of poorly coordinated institutions, inconsistent laws and defective policies has contributed to the accountability crisis, and few areas of international environmental governance escape Humphreys' scrutiny. His analysis includes international institutions

(the World Trade Organization, World Commission on Forests and Sustainable Development), international law (Convention on Biological Diversity, Convention on International Trade in Endangered Species, Kyoto Protocol), international policies (World Bank Forest Strategy, Forest Law and Governance programmes) and industry and non-governmental organization (NGO) initiatives (certification and labelling).

Records of the 1992 United Nations Conference on Environment and Development debates (at which the non-legally binding, and thus toothless, Forest Principles were agreed) confirm that forest issues were poorly defined, the parties polarized and the way forward uncertain and deeply problematic. Almost fifteen years later, Humphreys finds that little real progress has been made. Nations have agreed in principle that better environmental governance is a worthy ideal and numerous instruments have emerged to counter deforestation. These include new treaties, technologies, taxes, incentives and tradable allowances. Meanwhile, many foresters in the trenches have conceded defeat as the conjunction of political and economic forces works in favour of continuing forest loss and degradation. Those forces include lack of good governance (manifested particularly, but not only, in illegal logging), continuing pressure from the agricultural frontier, market distortions which arise from the lack of valuation of environmental services and the lack of institutional strengthening in many key forested countries.

Not surprisingly, the most recent Food and Agriculture Organization of the United Nations figures confirm that deforestation continues at a disturbing rate, particularly in the Amazon, Central Africa and Asia-Pacific region. Indeed, countries in which deforestation rates have fallen have achieved this outcome simply because they have no forest left to destroy. Both substantively and procedurally, Humphreys argues, the international forest debate has become a race to the bottom.

Unfortunately, the recommendations in the book's final chapter are as inspiring as they are impractical. Having argued that trade in forest goods has a stronger normative force in international law than public goods provision, Humphreys proposes that an alternative model of global governance be established, based on principles of public accountability. That model would comprise a new Convention on Transnational Corporations (with a complex system of local, national and international charters), under the terms of which corporations would agree to uphold defined environmental standards, and a new International Environmental Court, in which environmentally-delinquent corporations would be penalized.

These laudable notions overlook the realpolitik of international law. First, international law is a voluntary system, so a corporation which does not wish to be bound by the new convention can usually ignore it, and there is no reason to believe that corporations which routinely breach national environmental law would agree to new international environmental law. Second, the International Court of Justice already has jurisdiction in international environmental matters. That jurisdiction is defined and limited by the voluntary nature of the international legal system, but a new International Environmental Court would operate within the same system and so would be subject to the same constraints. Third, a range of dispute resolution mechanisms already exists in private international law. Each has advantages and disadvantages, but it is difficult to see how the development of another dispute resolution mechanism would reduce deforestation. Finally, the Aarhus Convention (on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters) already operates in Europe and

the United Nations Convention on Corruption binds its 140 member countries.

In fact, extensive protection for forests already exists in international law, albeit in an uncoordinated collection of legal instruments. There are gaps in that protection, but events of 1992–2006 confirm that the biggest challenges are the development of the rule of law in turbulent regions of the world and the identification of a means by which existing law, national and international, can be implemented effectively on a global scale.

For any international environmental mechanism, such as a convention, court or process, to be effective, countries must engage fully with that mechanism. Engagement requires long-term commitment from the whole country, including politicians and crony businesses, not just from corporations, local communities and NGOs. Each of those groups has an important role to play, but the effectiveness of a mechanism requires that all be involved. Long-term commitment will develop only when parties can see that their interests are being served. For clearly identifiable issues (such as the protection of a single species), this is challenging. For matters as complex and diverse as the 270 or so forest-related issues which emerged from the UN forest processes, this is almost impossible. It follows that the creation of new conventions or courts is not now, and may never have been, an effective path forward.

Nonetheless, this is a useful book (and a logical sequel to Humphrey 1996). After fifteen years of circuitous negotiations, UNFF has now postponed consideration of a binding forest treaty until 2015. Instead, at its seventh session in April 2007, it concluded yet another non-legally binding forest agreement. Humphreys argues that at best, a new non-legally binding instrument will yield only incremental gains and states that ‘... if it merely reiterates existing commitments, then it will prove an irrelevancy’. It is difficult to fault Humphreys’ argument.

Reference

Humphrey, D. (1996) *Forest Politics: The Evolution of International Cooperation*. London, UK: Earthscan.

CATHERINE MACKENZIE
Lucy Cavendish College
University of Cambridge
Cambridge, CB3 0BU, UK
e-mail: cm517@cam.ac.uk

doi:10.1017/S0376892907003955

River and Stream Ecosystems of the World

EDITED BY C.E. CUSHING, K.W. CUMMINS AND G.W. MINSHALL

xvi + 817 pp., 26 × 19 × 4 cm, ISBN 0 520 24567 9 paperback, GB£ 48.95/US\$ 75.00, Los Angeles, USA/London, UK: University of California Press, 2006

This significant book was first published in 1995 as volume no. 22 in Elsevier’s series *Ecosystems of the World*. The current version is a new print (paperback) with a new introduction. The original is still available but is more expensive; in fact, the new print is a quarter of the original’s price. Each of the 22 chapters provides an

account of the rivers in a geographical region. A certain imbalance reflects the globally uneven scientific coverage of rivers and associated knowledge. Unsurprisingly, 11 chapters deal with Europe and North America. The rest of the Americas is represented by three chapters, Africa by three, Asia by two, New Zealand by one, Australia by one and Oceania by one. Coverage within regions also differs, ranging from a single stream (the Ter in Spain, and the Amur River in Asia) to an entire continent (Australia) per chapter.

This text should be useful for anyone interested in streams and rivers as ecosystems worldwide or looking for broad and accessible information about rivers in a particular region. More than 10 years have passed since the original publication, so the book reflects how river ecosystems were perceived in the early 1990s. How has this affected its value? Naturally, many important studies have been performed meanwhile, and an update would have been a preference. Recent landmark studies include those using large-scale manipulations regarding bottom-up processes, newly-shaped rivers from retreating glaciers, re-evaluation of microbial importance and landscape-ecological progress, and many others that have excited stream ecologists in the last decade. Despite missing out on these, the book is still a highly valuable source of information. The reissuing of this book is interestingly timed because it coincides with the advent of several new books in the field; *Rivers of North America* also includes Cushing as co-editor (Benke & Cushing 2005), and a European counterpart is in the making.

The River Continuum Concept (RCC) is the editors’ baby, formulated in 1980 with the late Robin Vannote as main architect. Not surprisingly, contributing authors seem to have been instructed to relate their regional perspectives to RCC primarily, but also to the Patch Dynamics Concept and other ideas that were seminal in the early 1990s. It turns out, however, that the information necessary for testing these is rarely available, and in almost every chapter the lack of suitable data is emphasized, even when reporting from the best studied regions. Concerning the RCC in particular, support is variable, often dutiful, and in fact rejected by a striking number of authors on the grounds that their study systems have little forested headwaters (for example in alpine and many dry regions) and are strongly impacted by man. Additionally, climate, vegetation and lateral interactions, especially in floodplain rivers, often tend to override the longitudinal influences predicted by the RCC. Indeed, some authors argue that rivers are ‘predictably unpredictable’ owing to erratic, storm-driven floods, as in South Africa.

Unfortunately, in the new introduction (which is only a slight modification of the old one), there is no attempt to synthesize the rich information presented and neither is it done anywhere else in the book. This was also true of the original version and seems to be a missed opportunity. Nevertheless, several authors make strong efforts to do just that for their allotted regions, for example Webster *et al.* for eastern USA and Dudgeon for tropical Asia. The new introduction is, in my opinion, over-defensive of the RCC. In the book, the demonstrated complexities of the world’s rivers rather defy the notion that the RCC would suffice as a framework explaining how rivers work. There is no question about the exceptional role this concept played for the development of stream ecology. However, amending or broadening the RCC seems inadequate for qualifying it as a unifying principle for river ecosystems.

I found the book an enjoyable read, particularly the chapters about rivers in regions that are less frequently stumbled upon in the literature. Even though Hynes decades ago remarked about the extreme similarity regarding river life in running waters across the

globe, it is interesting to identify that there may also be striking differences, and many are highlighted in this book. For instance, who knew about fluorescent oligochaetes in the Far East Amur, or this river's lush meadows of algae growing on the underside of the river's winter ice? Or that the polychaete worms we normally associate with marine systems abound in large tropical Asian rivers and Pacific island streams, but nowhere else? An interesting regional contrast lies in the types of system that have been targeted. While most river research in North America and Europe has focused on small streams, it is the large river systems that have received most attention in other continents (such as South America and Africa). Possibly, this discrepancy reflects the fact that large rivers are less suitable for the advancement of science beyond purely descriptive studies, because experimental manipulations are rarely possible. Therefore small-system studies tend to predominate where interest has been more process-oriented.

With the exception of the new introduction, this volume is virtually identical to the original, down to the page numbering, including any typing errors (which are few), and the addresses and affiliations of the authors as they were in 1995. The pictures are also the same, but the contrast is reduced, making the new print look slightly older inside than the original.

Reference

Benke, A. & Cushing, C., eds (2005) *Rivers of North America*. Canada: Elsevier Inc.

BJÖRN MALMQVIST
Ecology and Environmental Science
 Umeå University
 SE-90187 Umeå
 Sweden
 e-mail: bjorn.malmqvist@emg.umu.se

doi:10.1017/S0376892907003967

Green Cities. Urban Growth and the Environment

BY MATTHEW E. KAHN

vii + 160 pp., 23 × 15 × 1 cm, ISBN 0 8157 4815 9 paperback, US\$ 18.95, Washington, DC, USA: Brookings Institution Press, 2006

Green Cities is a welcome addition to the rising tide of academic research that examines urban-environment interrelationships. Written by a professor of economics, the book examines 'green' and 'brown' impacts of urban growth. Kahn aptly includes multi-scalar (local-global) and comparative dimensions as he addresses a number of major questions: What is a green city? What does it mean to say that one city is greener than another? Are the metrics, data and models being used to measure urban greenness any good?

Green Cities gives special attention to the strengths and weaknesses of the Environmental Kuznets Curve (EKC). The EKC is a hypothesis that relates income growth to environmental quality (for example the condition of a nation's water, land or air). The EKC takes the form of an inverted U-shape. The explanation for this bell-shaped curve goes as follows: (1) environmental concerns during the earliest stages of urban-industrial growth are largely ignored by society (i.e.

there is a willingness to accept raising pollution levels in return for the 'take-off' of modern urban and economic development); yet (2) this initial acceptance of pollution ultimately reaches a turning point, after basic needs are met, when societal demands for a cleaner environment are pressed into action, thereby reversing the trend of environmental degradation. Kahn characterizes the EKC as a 'parsimonious model of how environmental quality evolves in a growing market economy', but he also intelligently outlines some 'potentially dangerous misconceptions' (p. 48).

Kahn's critical evaluation of green metrics and models (including the EKC) goes beyond economics. *Green Cities* takes into account ecological footprints, public health criteria, real estate prices and migration patterns. These measures of urban sustainability go beyond market forces to also include the role of governance, population growth and the impacts of urban sprawl.

Kahn wrote *Green Cities* hoping that 'professors that teach classes on environmental policy, cities, urban economics, environmental economics and regulation could use parts of this book in their courses' (see URL <http://greeneconomics.blogspot.com/>, 21 August 2006). Environmental policy-makers and planners may also find the book useful. Unfortunately, some of the most important policy work on this subject does not get any coverage. No mention is made of the Sustainable Cities Programme, a joint United Nations-Habitat/United Nations Environment Programme facility established in the early 1990s to build capacities in urban environmental planning and management (URL <http://www.unhabitat.org/categories.asp?catid=369>). Nor does the book discuss the urban sustainability dialogues held during recent World Urban Forums. Reference to the United Nations appears only once in the book's index. Omission of global institutional efforts aimed at greening cities may be understandable in such a short book, but two additional gaps are more troubling.

First, *Green Cities* makes practically no reference to the rapidly growing planning literature in 'new regionalism' and 'progressive regionalism', which sheds light on inner city-suburb interdependencies, regional scale jobs-housing balance, smart growth and other themes that fit well within the subject matter of *Green Cities*.

Second, *Green Cities* does not adequately deal with 'multi-culturalism' and 'new institutionalism', fields that are very important with respect to urban governance. In his chapter on population growth and the urban environment, Kahn asserts that: 'In cities and communities with greater levels of racial heterogeneity and income inequality, people are less likely to volunteer and less likely to be members of civic groups. Such cities are more likely to be 'brown' because residents litter and pollute without considering the greater social consequences of their actions' (p. 108). This argument does not square well with some recent urban ethnographic work that examines multiculturalism, community-building and the urban prospect. Works by Leonie Sandercock (for example Sandercock 2004) and Robert Gottlieb (for example Gottlieb *et al.* 2005) run counter to Kahn's observations about diversity. Also running counter to Kahn's views about heterogeneity is a UN-Habitat (2006) press release describing Vancouver, Canada: 'While many point to Vancouver for its environmental consciousness and physical beauty, it is, in effect, the city's cultural diversity and resources that work most effectively toward strengthening its environmental sustainability and liveability'.

Green Cities is a good read if you are comfortable accepting its assumption that capitalism's ascendancy (as a mode of production, with various incarnations around the world) will continue for quite

some time to come and that 'the future of urban environmental quality depends on how pollution evolves in conjunction with free-market growth' (p. 2). Those readers who want radical views on urban sustainability (such as perspectives advanced by political ecologists, bioregionalists, eco-socialists and green anarchists, among others) will have to look elsewhere.

References

- Gottlieb, R., Vallianatos, M., Freer, R.M. & Dreier, P. (2005) *The Next Los Angeles: the Struggle for a Liveable City*. Berkeley, CA, USA: University of California Press.
- Sandercock, L. (2004) *Cosmopolis II: Mongrel Cities of the 21st Century*. Continuum International Publishing Group.
- UN-Habitat (2006) Vancouver: the world's most liveable city combines multiculturalism with environmental sustainability [www document]. URL <http://ww2.unhabitat.org/mediacentre/documents/sowcr2006/SOWCR%2014.pdf>

KEITH PEZZOLI

Urban Studies and Planning Program
University of California
San Diego, California, USA
e-mail: kpezzoli@ucsd.edu

doi:10.1017/S0376892907003979

Emerging Threats to Tropical Forests

EDITED BY WILLIAM F. LAURANCE AND CARLOS A. PERES

xii + 563 pp., 105 figs, 23 × 15 × 3.5 cm, ISBN 0 226 47022 9, US\$ 40.00/GB£ 25.50, Chicago, USA/London, UK: University of Chicago Press, 2006

Emerging Threats is a massive compendium, 23 chapters in 6 sections: threats from climate change, synergistic effects of environmental changes, pathogens and invaders, insidious and poorly understood threats, solving and mitigating threats and a summary statement of what is known and remains to be learned. At least half the book is devoted to New World forests, especially those of Brazil, but individual chapters feature African, Asian, Australian and Madagascan forests as well. Each section but the last has an extensive introduction by one or both editors that summarizes the papers and places them in context, and these introductions can be used by readers to get the gist of the section and to focus their attention on chapters of special interest. Chapters are of uneven quality; some address general issues (for example plant pathogens), while others focus narrowly on specific cases (such as African apes). The sheer size of the volume and the exhaustive treatment of many important topics make *Emerging Threats* an important tropical forest conservation text and parts of it are obligatory reading for those interested in the field.

Fires in tropical forests receive rather little press except as human health risks and contributors to increased atmospheric CO₂; catastrophic fires are rare because of the dense, often moist foliage and sparse litter. Chapters by W.F. Laurance on the interaction of fragmentation and fire, and J. Barlos and C.A. Peres on frequent, low-intensity ground fires, both focused on Amazonia, redress this imbalance and depict the many dimensions of a major conservation

threat that is just beginning to be recognized. The entire section on climate change is concise and clear, and elucidates the complicated two-way interaction between climate change and tropical forests. The chapter by R. Avissar and coauthors on how deforestation affects regional and global climate, again featuring Amazonia, is particularly lucid and alarming. Among the synergistic interactions, in addition to fragmentation and fire, hunting, fragmentation and human population movement recur in several chapters and are featured in a review for Amazonia by C.A. Peres and F. Michalski.

A high point in the invasion section is the excellent discussion of the 'dodo tree' of Mauritius *Sideroxylon grandiflorum* (formerly *Calvaria major*) by C. Baider and F.B.V. Florens, who conclude from extensive observation and experiment that the species, though threatened, is not as rare as once thought, and its problems have nothing to do with the extinction of the dodo. Rather, they are caused by introduced plants and animals, and the authors believe this is a likely mechanism for decline of other trees on Mauritius and probably other islands. They also inveigh against the 'biopoetic' approach; propagation of colourful, attractive hypotheses based on few data. In the insidious threat section, an Amazonian case study by S.G.W. Laurance on how roads affect birds is the context for a good general review of the literature on impact of roads on tropical wildlife.

Any conservationist will surely turn quickly to the section on solving and mitigating threats, and this is a mixed bag. On the plus side, chapters by K. MacKinnon on Indonesia and P.M. Fearnside on Amazonia are refreshingly frank about the roles of government mismanagement, cronyism and outright corruption in generating various threats. And a chapter by E. Niessen and R.E. Rice is an unusual, compelling attack on the dominant conservation strategy of multiple-use; it therefore contradicts a number of other chapters. This conflict is barely mentioned in the section introduction by W.F. Laurance, who points to difficulties with some but not all of the ideas advocated by the various authors. It is interesting that, in this section and the book as a whole, the importance of human population growth in generating or exacerbating many of these threats is implicit, but it is almost never explicitly discussed. A shortcoming of this section is that most authors are biologists writing about problems that are fundamentally as much economic and sociological as they are biological.

Although *Emerging Threats* as a whole is an important tropical conservation text, with some excellent reviews, introduction of important new topics and fresh insights on some old problems, it is not uniformly rigorous. Several chapters simply state as facts ideas that were accepted as truisms in the earlier days of conservation biology but are questioned, modified or simply discredited nowadays. This is to say that some papers, had they been submitted to journals rather than published in a book, might well have been forced to undergo substantial revision. There is also disproportionate citation of literature that supports the views espoused in the chapters and section introductions, often strings of references where a well-chosen few would have sufficed, and rather little citation of contrary views, even when such views are recent and well-known. If these papers had been published in journals, it is unlikely that, of c. 1350 references, 56 would be by one editor and 58 by one chapter author

DANIEL SIMBERLOFF

Department of Ecology and Evolutionary Biology
University of Tennessee
Knoxville, TN 37996 USA
e-mail: dsimberloff@utk.edu

doi:10.1017/S0376892907003980

Killing our Oceans. Dealing with the Mass Extinction of Marine Life

BY JOHN CHARLES KUNICH

ix + 245 pp., 24 × 16 × 2 cm, ISBN 0 275 98878 3 hardback, US\$ 49.95/GB£ 28.99, Westport, CT, USA: Praeger Publishers, 2006

This book addresses one of the most important problems facing the planet, the destruction of life in the oceans. It presents a substantial amount of factual material designed to alert its readers to the threats and to promote a sense of urgency.

The author writes in the style of a well-meaning scold, explaining that the decision-makers of the world have failed to develop strategies and institutions that can address and resolve this approaching disaster. He writes knowledgeably and effectively about the impact of technological advancements in fishing techniques, including high-seas driftnets and deep-sea trawls, which have produced 'carnage' that has decimated many fish species (p. 31). He denounces the response of the international community, asserting that 'the sum total of all the phenomenally voluminous international agreements related to marine biodiversity is about as meaningful an answer to our mass extinction crisis as professional wrestling' (p. 48). He summarizes the 1982 United Nations Law of the Sea Convention in some detail, but dismisses the important advances found in this Convention requiring countries to protect and preserve the marine environment as 'nice-sounding but content-challenged' (p. 61), 'largely aspirational' (p. 63) and 'somewhat nebulous' (p. 64). He denounces other international treaties as inadequate, and asserts that '[t]he tragic flaw of international law is that it only has meaning for those who would do the right thing anyway' (p. 93). He also denounces academics ('who inhabit a comfortable world of theory and abstract principles', p. 120) as offering only bandage approaches to the crisis of the oceans (p. 114).

Is further preaching needed to the effect that the world's environment is in a state of crisis? Perhaps, Obviously Professor Kunich is correct that a crisis of epic proportions is building.

But the reader of such a book hopes also to find proposals for action. The author suggests appealing to the self-interest of nations to protect the oceans, and says that one strong country must take the lead to 'use debt-for-nature swaps, cash transfers, technology/information sharing, and a variety of diplomatic inducements to encourage other nations to take specific steps to protect the marine hotspots' (p. 122). He points to the US Tropical Forest Conservation Act of 1998 as an example of an enlightened enactment that has helped to protect forests through 'debt for nature swaps' (p. 130) and urges the USA to enact 'another incentives-based federal statute' to protect the oceans (p. 136) and to devote US\$ 5–19 billion to saving the oceans. He then offers a 'decision matrix' to help prioritize the agenda for protecting fragile ocean resources (pp. 142–43). He acknowledges that this chart approaches 'pretentiousness' (p. 142), and it does come across as an attempt to cloak the obvious in scientific garb.

The author makes a few errors here and there, asserting, for instance, that the London Dumping Convention is binding only on its contracting parties (p. 90), and thus failing to recognize that Article 210(6) of the Law of the Sea Convention makes the rules and standards found in the London Convention applicable to all countries that have ratified the Law of the Sea Convention.

This book is useful in sounding the alarm regarding oceans, and it offers some background and some guidance that will be

useful to many readers. The author trivializes the efforts that many have pursued during recent years to promote international consensus regarding needed strategies to reverse the decline of ocean biodiversity, and the book lacks the range of specific proposals found, for instance, in Glover and Earle (2004). Nonetheless, each additional voice alerting us to the need for urgent action is helpful and welcome.

Reference

Glover, L.K. & Earle, S.A. (2004) *Defying Ocean's End. An Agenda for Action*. Washington, DC, USA: Island Press.

JON VAN DYKE
University of Hawaii Law School
2515 Dole Street
Honolulu, Hawaii 96822, USA
e-mail: jvandyke@hawaii.edu

doi:10.1017/S0376892907003992

The Urban Whale: North Atlantic Right Whales at the Crossroads

EDITED BY SCOTT D. KRAUS AND ROSALIND M. ROLLAND

xviii + 543 pp., 34 colour plates, 24.2 × 16.7 × 4.1 cm, ISBN 0 674 02327 7 hardback, US\$ 55.00, Cambridge, MA, USA: Harvard University Press, 2007

Right whales (Balaenidae) are known to have been systematically hunted in Atlantic waters for about a thousand years, from the ninth to the early twentieth centuries, initially primarily by Norse and Basque whalers, and more recently, to commercial extinction largely by North American whalers. These enormous long-lived beasts have the misfortune to be relatively placid and approachable near-shore, near-surface swimmers that tend to float once killed and from which huge quantities of oil and baleen of the highest quality can be obtained. Over the centuries, population after population of right whales was commercially exhausted along the European and then American coastlines. And once the take ended in a region, the few survivors have (at least in north Atlantic waters) not bounced back to replenish their niches. The right whale carrying capacity (pre-hunt abundance) for the global ocean has been estimated to fall between 100 000 and 300 000, with about two-thirds of these in the Southern Hemisphere. Today, only occasional stragglers seem to be found in the eastern Atlantic, perhaps as many as 350 in the western Atlantic (where numbers are declining, and where the regional carrying capacity might have been of the order of 10 000, perhaps less), about 8000 in the Southern Ocean (where numbers are rising) and apparently less than 200 in the North Pacific (where number dynamics are not known).

The present compendium attempts to bring between two covers detailed technical summaries of all that is known about the research methodology, physiology, ecology and conservation of *Eubalaena glacialis sensu stricto* (here referred to as the North Atlantic Right Whale). That taxon in the present text is more narrowly defined than by some earlier authors, here separating out as distinct species both *E. australis* (the southern right whale) and *E. japonica* (the North Pacific right whale), these three taxa being effectively isolated from each other. The *raison d'être* of the book as a whole and every chapter in

it, is to bring together information that might contribute to reversing the current slide to extinction of the North Atlantic Right Whale.

As is meticulously developed and documented in this book, the remnants of the western population of the North Atlantic right whale have not been commercially exploited since about 1914, but at least half of the substantial premature mortality occurring since then has been anthropogenic (often through collisions with ships or entanglements in fishing gear; and during World War II when mistaken by US forces for enemy submarines). Additional more indirect premature anthropogenic mortality has certainly been resulting from toxic pollutants in the water, and also perhaps from human co-option for example for ship traffic and oil rigs, of inshore breeding sites and other habitat disturbances, probably including noise pollution.

This book grew out of a research project on North Atlantic right whales initiated by the New England Aquarium (Boston, USA) in 1980. It contains 17 chapters prepared in various combinations by 35 scientists representing an extraordinary range of expertise, of whom 28 are American, six Canadian and one Scottish. Seven of the authors (including the two editors) are affiliated with the New England Aquarium, and six others are employed by the US National Marine Fisheries Service. Included among the several appendices are compilations of scientific names of marine species (but only as used in the present book), abbreviations and acronyms used, and useful books, websites and films for further reference.

The presentation begins quite properly with an excellent overview of the entire book's coverage (Chapter 1), followed by a sweeping several-century history focusing largely, and in minute detail, on the artisanal and commercial exploitations of the North Atlantic right whale (Chapter 2). Several subsequent chapters deal primarily with research methodology (although these also include the needs for the described methods): a most informative examination of photographic identification and cataloguing of individual whales (Chapter 3); surveying for whale presence and numbers (Chapter 4); the study of skin lesions and what they tell us about the beast's health

(Chapter 9); and acoustic communication, where it would have been nice to include a recording with the book, or at least a reference to a website where the sounds can be heard (Chapters 10 and 11).

Physiology and ecology are also well covered in the book (and with those chapters by no means overlooking either the associated methodology or the conservation ramifications of the findings): what and how much the whales consume (largely the copepod *Calanus finmarchicus*, on average consuming 1.5×10^9 day⁻¹, in terms of the predator-to-prey mass differential equivalent to humans feeding on bacteria), how they accomplish this biologically and their foraging behaviour (Chapter 5); the complexities of reproduction (Chapter 6); DNA analysis (both historical and current), genetic profiling and the several uses to which those data are being put (Chapter 7); hormones, biotoxins and parasites, and the means for collecting samples (Chapter 8), about which more below; causes of death, with about half of observed mortality the result of ship collisions or fishing gear entanglement (Chapter 12); followed by approaches to mitigating such anthropogenic mortality (Chapters 13 and 14); projected impact of global warming, possibly not too serious (Chapter 15); and initial efforts at demographic modelling (Chapter 16). The book sums up the plight of the North Atlantic right whale (the 'urban whale') as suffering from 'urban whale syndrome', here defined as increased mortality from human activities, decreased reproduction, poor body condition or skin lesions and habitat loss (Chapter 17).

In conclusion, this book deserves to be studied with care by all marine biologists, but certainly read as well by everyone concerned with the cavalier relationship we have with the wildlife with which we share the planet.

ARTHUR H. WESTING
Westing Associates in Environment, Security, & Education
 134 Fred Houghton Rd
 Putney, VT 05346, USA
 e-mail: westing@sover.net